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TWX 710-320-6842 ASTROGRAM CAM ** Brian G. Marsden, Director
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CORRECTED OBSERVATIONS.

The following observations correct those previously published.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Mag.	Obs.
865	1964 09	12.86681	23 36 52.03	-00 43 55.0	MPC 2599		095
1209	1968 08	27.89133	22 13 02.12	-20 52 29.1	MPC 2975		095
1430	1953 06	04.12920	14 40 06.58	-21 48 36.1	MPC 966	16.3	760
1473	1954 06	28.32831	19 41 37.98	+02 12 10.0	MPC 1398		760
1553	1953 10	18.43189	02 47 29.51	+11 15 19.1	MPC 1160		760
1727	1983 03	12.50694	13 44 57.47	+26 27 54.7	MPC 7814		675
1939 FW	1939 03	22.96840	12 31 54.29	+04 29 34.8	TI 32		062
1983 AE2 *	1983 01	13.31319	08 21 34.10	+44 42 24.2	MPC 7640	15	675
1983 AE2	1983 01	14.30763	08 20 30.48	+44 52 24.6	MPC 7640		675
1983 AG2	1983 02	11.35189	09 46 28.20	+22 15 23.0	MPC 7654		704
1983 AG2	1983 02	11.38576	09 46 24.19	+22 14 49.8	MPC 7654		704
1983 AG2	1983 02	12.17709	09 44 55.48	+22 02 16.0	MPC 7654		704
1983 AG2	1983 02	12.24482	09 44 47.80	+22 01 11.0	MPC 7654		704
1983 AG2	1983 02	12.31244	09 44 39.78	+22 00 04.9	MPC 7654		704
1983 AG2	1983 02	12.39465	09 44 30.11	+21 58 47.0	MPC 7654		704
1983 AG2	1983 02	13.12421	09 43 09.21	+21 47 03.2	MPC 7654		704
1983 AG2	1983 02	13.16888	09 43 04.07	+21 46 20.2	MPC 7654		704
1983 AG2	1983 02	14.17140	09 41 13.09	+21 30 15.8	MPC 7654		704

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DELETED OBSERVATIONS.

The following observations are to be deleted.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Obs.
1852	1937 12	03.00507	06 09 45.06	+20 12 29.5	MPC 3232	020
1981 PL	1983 01	13.17243	07 11 08.60	+13 07 05.5	MPC 7654	704
1983 AG2	1983 02	14.12505	09 41 18.4	+21 31 02	MPC 7654	704

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IDENTIFICATION CHANGES.

Continuation to MPC 7793-7794.

Object	Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
1956 RX *	1956 09	08.25208	22 55 23.62	-09 44 22.8	1239	16.3	760
1956 RX	1956 09	08.29374	22 55 21.93	-09 44 33.6	1239		760
1973 UC6 *	1973 10	27.90103	01 44 16.41	+10 47 25.9	1973 SB4	16.5	095
1975 WA2 *	1975 11	29.53647	04 40 54.55	+23 05 39.0	1975 WJ1		330
1980 UB1 *	1980 10	17.89933	02 31 36.02	+13 44 26.7	1980 TT1	17.0	095

OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

- 010 Caussols. Observers J.-L. Heudier, C. Pollas and A. Maury (assisted by M. T. Dumoulin and R. Chemin.
 012 Uccle. Observer H. Debehogne.
 017 Hoher List. 0.3-m astrograph. Observer M. Geffert.
 020 Nice. Observer B. Milet.
 024 Heidelberg. Observers H. Mandel, U. Gorze and G. Klare.
 046 Klet. Observers A. Mrkos and Z. Vavrova.
 049 Kvistaberg. Observers T. Oja and G. Hahn. Measured by Hahn and Lundgren. Communicated by H. Rickman.
 056 Skalnaté Pleso. Observer J. Fabricius. Measured by J. Svoren.
 372 Geisei. Observer T. Seki. In part from Orient. Astron. Assoc. Comet Bull. No. 246 and Yamamoto Circ. No. 1994.
 381 Tokyo Observatory, Kiso Station. Observer K. Ishida.
 391 JCPM Ayashi Station. Observer M. Koishikawa.
 413 Siding Spring. 1.2-m U.K. Schmidt Telescope Unit. Observers R. D. Eberst, A. J. Longmore, D. A. Pickup, P. R. Standen and M. E. Sim.
 474 Mt. John University Observatory. Observer A. C. Gilmore. Measured by P. M. Kilmartin (assisted by R. McIntosh).
 494 Stakenbridge. Observer: B. Manning. Communicated by G. M. Hurst.
 501 Royal Greenwich Observatory. Long. and Parallax 0.34, -270, -329 (see MPC 7759). Observers R. W. Argyle and J. Sinclair (0.66-m refractor) on May 9. The other observations are by R. McNaught and M. White with the University of Aston's Hewitt Satellite Camera.
 502 Colchester. Observer M. J. Hendrie. Long. and Parallax 0.85, -263, -334 (see MPC 7759).
 564 Herrsching, near Munich. Observer P. Stattmayer. Measured by R. M. West. Long and Parallax 11.19, -286, -316 (see MPC 7759).
 675 Palomar. The measurements of comets 1980b and 1983d are by J. Gibson from plates taken with the 1.2-m Schmidt (observers C. Kowal on May 7, A. Saha on May 12-13). The observations of comet 1983e are by S. J. Bus and E. H. Bus with the 0.46-m Schmidt telescope.
 688 Lowell Observatory, Anderson Mesa Station. Observer B. A. Skiff. Measured by Skiff, C. Lugenbuhl and C. Shoemaker.
 696 Whipple Observatory. Observers J. Beckers, G. Bothun, G. Foltz, J. Patterson, D. Walsh and R. Weymann. Single offsets from a star using the Multi-Mirror Telescope.
 707 Chamberlin Observatory, field station. Observer E. Everhart.
 786 U.S. Naval Observatory, Washington. Observer G. Douglass. Measured by R. S. Harrington.
 801 Oak Ridge Observatory. Observers D. W. E. Green, R. E. McCrosky and G. Schwartz. Measured by Green. 0.40-m astrograph (except for May 12 and 18; then 1.5-m reflector and Damon camera, respectively, instead).
 805 University of Chile, Cerro El Roble Station. Observers J. Maza and L. E. Gonzalez.
 984 West Chinnock. Observer H. B. Ridley. Measured by M. J. Hendrie. Long. and Parallax 357.26, -269, -330 (see MPC 7759).
 993 Woolston Observatory. Observers P. Birtwhistle and M. Dykes, assisted by R. L. Waterfield. Measured by Birtwhistle.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
Comet Araya (1972 XII)						
/1972 XII	1974 08	19.6536	22 52 26.40	-41 46 43.5	16.5T	413
/1972 XII	1974 08	19.6814	22 52 24.75	-41 46 44.3		413

/1972 XII	1974 08	20.6198	22 51	19.83	-41 48	04.1		16.5T	413
/1972 XII	1974 08	20.6511	22 51	17.88	-41 48	05.6			413
Periodic Comet Clark									
/1973 V	1973 07	27.6867	21 09	15.67	-39 01	02.0		13 T	413
/1973 V	1973 07	28.6590	21 08	45.51	-39 04	41.4		13 T	413
Periodic Comet Schwassmann-Wachmann 1									
/1974 II	1983 04	05.65694	13 05	40.11	-18 11	39.6		18 T	372
/1974 II	1983 04	05.66736	13 05	39.79	-18 11	37.4			372
Comet Schuster (1975 II)									
/1975 II	1976 12	25.7100	09 56	05.34	-49 00	46.0		19 T	413
Comet Lovas (1975 VIII)									
/1975 VIII	1976 09	02.6674	00 37	53.91	-22 29	10.7			413
/1975 VIII	1976 09	02.7091	00 37	51.66	-22 29	07.7			413
/1975 VIII	1976 11	16.4224	23 47	47.49	-18 02	40.9		17 T	413
/1975 VIII	1976 11	16.4641	23 47	46.84	-18 02	27.7			413
Comet Kobayashi-Berger-Milon (1975 IX)									
/1975 IX	1976 01	08.6247	08 17	07.40	-69 54	28.3		14 T	413
/1975 IX	1976 01	08.6733	08 16	53.20	-69 54	49.7			413
/1975 IX	1976 01	28.5134	06 42	32.70	-69 15	14.4			413
Comet Mori-Sato-Fujikawa (1975 XII)									
/1975 XII	1976 08	02.4487	17 25	48.60	-54 57	45.3		14 T	413
/1975 XII	1976 08	02.4626	17 25	47.67	-54 57	28.8			413
Periodic Comet Gunn									
/1976 III	1976 05	27.7494	21 37	00.92	-24 25	03.5			413
/1976 III	1976 05	27.7911	21 37	02.71	-24 25	12.6			413
Periodic Comet Klemola									
/1976 X	1976 11	24.4345	23 51	10.54	-06 33	19.2		18 T	413
/1976 X	1976 11	24.4484	23 51	11.39	-06 33	17.4			413
Comet Bowell (1980b)									
/1980b	1982 12	06.09690	19 39	16.93	-21 40	27.3			675
Periodic Comet Churyumov-Gerasimenko									
/1982f	1983 02	13.89751	07 18	36.53	+36 53	36.0			993
/1982f	1983 03	04.86161	07 37	02.00	+34 05	19.8			993
Periodic Comet Tempel 1									
/1982j	1983 04	05.85139	12 56	07.88	+15 49	39.0		13 T	046
/1982j	1983 04	05.86279	12 56	07.26	+15 49	40.8			046
/1982j	1983 04	08.90937	12 53	22.78	+15 53	17.2			494
/1982j	1983 04	12.8945	12 49	44.04	+15 52	05.7			494
/1982j	1983 04	13.03611	12 49	35.95	+15 51	51.6		11.5T	984
/1982j	1983 04	15.92294	12 46	59.82	+15 46	17.8		11.5T	502
/1982j	1983 04	16.81584	12 46	12.16	+15 43	46.1			046
/1982j	1983 04	16.82302	12 46	11.69	+15 43	50.4			046
/1982j	1983 05	05.86753	12 33	20.7	+13 16	04			024
Periodic Comet Kopff									
/1982k	1983 04	17.00138	15 46	47.02	-10 47	52.3		11 T	046
/1982k	1983 04	17.01550	15 46	46.95	-10 47	48.2			1 046

Periodic Comet Bowell-Skiff

/1983c	1983	03	18.63907	09	19	32.7	+16	47	02	18	T	372
/1983c	1983	05	16.19306	10	20	15.08	+08	49	56.8	19	T	707

Comet IRAS-Araki-Alcock (1983d)

/1983d	1983	04	27.88773	19	04	56.35	+49	17	03.8			049
/1983d	1983	04	27.90643	19	04	55.53	+49	17	30.1			049
/1983d	1983	04	27.93551	19	04	53.94	+49	18	10.5			049
/1983d	1983	05	01.87583	18	59	44.5	+51	16	01	2		049
/1983d	1983	05	02.46120	18	58	27.59	+51	42	09.4			675
/1983d	1983	05	02.49106	18	58	22.79	+51	43	35.3			675
/1983d	1983	05	02.58788	18	58	12.03	+51	47	49.8			381
/1983d	1983	05	03.88318	18	54	24.6	+52	59	15	2		049
/1983d	1983	05	04.38663	18	52	28.70	+53	34	11.6			707
/1983d	1983	05	04.40243	18	52	24.46	+53	35	21.7			707
/1983d	1983	05	04.69618	18	51	07.92	+53	57	44.0			391
/1983d	1983	05	04.96216	18	49	50.8	+54	19	10	2		049
/1983d	1983	05	05.10990	18	49	06.47	+54	31	55.9			801
/1983d	1983	05	05.16619	18	48	47.99	+54	37	09.3			801
/1983d	1983	05	05.24384	18	48	20.85	+54	44	28.8			801
/1983d	1983	05	05.36027	18	47	37.37	+54	55	35.6			801
/1983d	1983	05	05.62917	18	46	00.43	+55	22	11.9			391
/1983d	1983	05	05.65347	18	45	50.18	+55	24	50.3			391
/1983d	1983	05	05.70833	18	45	26.99	+55	30	44.6			391
/1983d	1983	05	05.72917	18	45	17.35	+55	32	58.2			391
/1983d	1983	05	05.75000	18	45	08.14	+55	35	15.7			391
/1983d	1983	05	05.77083	18	44	58.72	+55	37	29.8			391
/1983d	1983	05	05.88076	18	44	16.23	+55	48	55.9			017
/1983d	1983	05	05.89411	18	44	10.18	+55	50	28.5			017
/1983d	1983	05	05.94410	18	43	47.49	+55	56	18.9			017
/1983d	1983	05	06.03353	18	43	05.06	+56	06	58.2			012
/1983d	1983	05	06.04738	18	42	58.19	+56	08	38.6			012
/1983d	1983	05	06.07353	18	42	45.22	+56	11	59.2			010
/1983d	1983	05	06.22551	18	41	30.70	+56	30	29.6			801
/1983d	1983	05	06.24271	18	41	23.44	+56	32	26.6	3		707
/1983d	1983	05	06.24549	18	41	20.55	+56	33	02.1			786
/1983d	1983	05	06.26426	18	41	11.88	+56	35	09.5	3		707
/1983d	1983	05	06.29434	18	40	52.56	+56	39	24.7			801
/1983d	1983	05	06.33296	18	40	34.51	+56	44	23.5			696
/1983d	1983	05	06.33682	18	40	32.24	+56	44	54.7			696
/1983d	1983	05	06.34589	18	40	22.80	+56	46	12.1			801
/1983d	1983	05	07.06222	18	32	31.75	+58	33	18.0			501
/1983d	1983	05	07.08178	18	32	19.58	+58	36	02.2			801
/1983d	1983	05	07.17700	18	30	59.97	+58	53	09.6			801
/1983d	1983	05	07.25734	18	29	46.85	+59	08	02.6			801
/1983d	1983	05	07.36709	18	28	05.69	+59	28	51.9			675
/1983d	1983	05	07.71097	18	21	51.00	+60	40	11.3			381
/1983d	1983	05	07.71789	18	21	42.43	+60	41	42.1			381
/1983d	1983	05	08.37499	18	04	21.52	+63	31	21.9			696
/1983d	1983	05	08.76271	17	48	07.34	+65	37	16.6			381
/1983d	1983	05	08.76618	17	47	56.73	+65	38	29.8			381
/1983d	1983	05	08.76965	17	47	45.91	+65	39	41.1			381
/1983d	1983	05	08.77313	17	47	35.00	+65	40	53.3			381
/1983d	1983	05	08.86007	17	43	14.35	+66	11	01.3			017
/1983d	1983	05	08.87257	17	42	32.26	+66	15	42.9			017
/1983d	1983	05	08.94601	17	38	11.77	+66	43	54.3			010
/1983d	1983	05	08.95305	17	37	44.5	+66	46	18.7			501
/1983d	1983	05	09.03918	17	32	00.89	+67	20	36.2			020
/1983d	1983	05	09.06082	17	30	28.53	+67	29	10.4			020

/1983d	1983	05	09.07536	17	29	25.70	+67	34	58.3	020
/1983d	1983	05	09.33384	17	07	39.44	+69	23	09.0	696
/1983d	1983	05	09.39479	17	01	06.62	+69	49	29.8	707
/1983d	1983	05	09.40000	17	00	31.97	+69	51	44.2	707
/1983d	1983	05	09.83584	15	54	17.70	+72	54	22.8	020
/1983d	1983	05	09.88824	15	42	53.02	+73	13	25.9	020
/1983d	1983	05	09.90562	15	38	50.89	+73	19	14.8	564
/1983d	1983	05	09.90680	15	38	34.59	+73	19	34.9	564
/1983d	1983	05	09.90805	15	38	17.17	+73	20	00.1	564
/1983d	1983	05	09.90967	15	37	54.33	+73	20	32.5	564
/1983d	1983	05	09.91086	15	37	38.23	+73	20	52.7	564
/1983d	1983	05	09.91285	15	37	09.00	+73	21	34.8	564
/1983d	1983	05	09.91964	15	35	37.2	+73	23	29.6	501
/1983d	1983	05	09.92019	15	35	30.26	+73	23	31.8	494
/1983d	1983	05	09.92275	15	34	48.74	+73	24	45.8	564
/1983d	1983	05	09.92327	15	34	40.62	+73	24	54.8	564
/1983d	1983	05	09.92584	15	34	04.57	+73	25	43.3	564
/1983d	1983	05	09.92778	15	33	36.88	+73	26	19.4	564
/1983d	1983	05	09.93264	15	32	26.06	+73	27	50.4	564
/1983d	1983	05	10.08033	14	53	02.47	+74	02	11.3	564
/1983d	1983	05	10.27892	13	50	40.23	+74	02	21.9	696
/1983d	1983	05	10.44748	12	52	27.30	+72	54	50.5	688
/1983d	1983	05	10.85422	10	54	49.72	+65	14	48.7	056
/1983d	1983	05	10.86092	10	53	21.96	+65	04	07.0	020
/1983d	1983	05	10.91771	10	40	56.73	+63	23	52.0	056
/1983d	1983	05	10.94771	10	34	54.99	+62	28	52.3	501
/1983d	1983	05	10.94793	10	34	52.38	+62	28	25.3	501
/1983d	1983	05	10.94841	10	34	47.29	+62	27	36.0	501
/1983d	1983	05	10.95038	10	34	23.79	+62	23	52.0	501
/1983d	1983	05	10.95068	10	34	19.81	+62	23	13.5	501
/1983d	1983	05	10.95124	10	34	13.39	+62	22	10.6	501
/1983d	1983	05	10.96042	10	32	21.43	+62	04	04.9	056
/1983d	1983	05	11.11667	10	05	24.83	+56	44	10.4	786
/1983d	1983	05	11.13750	10	02	13.87	+55	57	41.1	786
/1983d	1983	05	11.14792	10	00	40.20	+55	33	58.2	786
/1983d	1983	05	11.15531	09	59	34.81	+55	16	39.4	801
/1983d	1983	05	11.15541	09	59	34.00	+55	16	28.9	801
/1983d	1983	05	11.15550	09	59	33.23	+55	16	15.1	801
/1983d	1983	05	11.19369	09	54	08.57	+53	47	44.8	801
/1983d	1983	05	11.19379	09	54	07.92	+53	47	32.5	801
/1983d	1983	05	11.19389	09	54	06.96	+53	47	16.7	801
/1983d	1983	05	11.21488	09	51	20.74	+53	00	04.4	696
/1983d	1983	05	11.23785	09	48	19.21	+52	04	28.1	707
/1983d	1983	05	11.24479	09	47	25.72	+51	47	42.1	707
/1983d	1983	05	11.88261	08	53	09.18	+24	45	35.6	501
/1983d	1983	05	11.88298	08	53	07.79	+24	44	41.3	501
/1983d	1983	05	11.88417	08	53	02.07	+24	41	49.1	564
/1983d	1983	05	11.88461	08	53	00.54	+24	40	37.5	564
/1983d	1983	05	11.88527	08	52	58.18	+24	39	00.7	564
/1983d	1983	05	12.14601	08	40	15.91	+14	48	07.8	688
/1983d	1983	05	12.14620	08	40	16.33	+14	47	56.5	675
/1983d	1983	05	12.14626	08	40	16.20	+14	47	50.1	675
/1983d	1983	05	12.14631	08	40	16.06	+14	47	44.0	675
/1983d	1983	05	12.14925	08	40	07.14	+14	41	36.9	696
/1983d	1983	05	12.33706	08	32	52.14	+08	36	54.0	474
/1983d	1983	05	12.33996	08	32	45.76	+08	31	30.0	474
/1983d	1983	05	13.17293	08	11	22.58	-10	11	02.0	675
/1983d	1983	05	13.17299	08	11	22.48	-10	11	04.7	675
/1983d	1983	05	13.17305	08	11	22.38	-10	11	07.3	675

/1983d	1983 05 14.11120	07 58 12.50	-20 48 48.1	805
/1983d	1983 05 14.11467	07 58 10.36	-20 50 27.4	805
/1983d	1983 05 14.11641	07 58 09.34	-20 51 18.2	805
/1983d	1983 05 14.11814	07 58 08.08	-20 52 10.1	805
/1983d	1983 05 14.11988	07 58 07.22	-20 52 58.8	805

Comet Sugano-Saigusa-Fujikawa (1983e)

/1983e	1983 05 09.43368	01 32 00.15	+39 36 16.6	707
/1983e	1983 05 09.46181	01 31 55.39	+39 36 43.8	688
/1983e	1983 05 09.75694	01 31 04.69	+39 41 17.1	391
/1983e	1983 05 10.45833	01 29 05.22	+39 51 25.1	688
/1983e	1983 05 10.76476	01 28 13.60	+39 55 38.4	381
/1983e	1983 05 10.78090	01 28 10.87	+39 55 51.1	8 T 372
/1983e	1983 05 10.79212	01 28 08.93	+39 56 00.8	372
/1983e	1983 05 11.48003	01 26 13.77	+40 04 51.4	675
/1983e	1983 05 12.35212	01 23 49.44	+40 15 07.3	801
/1983e	1983 05 12.42361	01 23 37.77	+40 15 52.0	707
/1983e	1983 05 12.48003	01 23 28.55	+40 16 28.8	675
/1983e	1983 05 12.79097	01 22 37.75	+40 19 51.0	372
/1983e	1983 05 12.79479	01 22 36.99	+40 19 51.3	372
/1983e	1983 05 12.79635	01 22 36.61	+40 19 51.4	372
/1983e	1983 05 13.47726	01 20 46.41	+40 26 42.9	675
/1983e	1983 05 18.31965	01 08 13.10	+40 59 10.4	801

Note 1: on a star. 2: positions semiaccurate. 3: images very bad.

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

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
104	1983 04 16.96318	13 57 52.00	-11 07 23.0				046
104	1983 04 16.97736	13 57 51.38	-11 07 20.7				046
956	1983 04 05.88455	12 46 24.32	-04 45 49.6				046
956	1983 04 05.89867	12 46 23.28	-04 45 37.8				046
996	1983 04 05.91979	12 57 16.07	-06 37 33.8				046
996	1983 04 05.93403	12 57 15.20	-06 37 30.8				046
996	1983 04 16.85387	12 49 03.53	-05 48 11.6				046
996	1983 04 16.86799	12 49 02.90	-05 48 08.0				046
1004	1983 04 05.88455	12 42 26.66	-01 51 01.9				046
1004	1983 04 05.89867	12 42 26.14	-01 50 57.9				046
1046	1983 04 05.91979	12 57 12.26	-07 11 33.4				046
1046	1983 04 05.93403	12 57 11.44	-07 11 31.1				046
1046	1983 04 16.85387	12 48 13.46	-06 39 51.3				046
1046	1983 04 16.86799	12 48 12.72	-06 39 48.3				046
1200	1983 04 16.96318	14 01 03.39	-11 40 47.2				046
1200	1983 04 16.97736	14 01 02.78	-11 40 42.9				046
1363	1983 04 05.91979	13 00 07.49	-06 59 26.4				046
1363	1983 04 05.93403	13 00 06.67	-06 59 21.4				046
1518	1983 04 05.88455	12 47 45.06	-02 01 15.5				046
1518	1983 04 05.89867	12 47 44.20	-02 01 11.9				046
1956	1983 03 10.88016	10 46 29.85	+08 09 30.0				046
2305	1983 04 05.88455	12 44 52.48	-02 04 37.2				046
2305	1983 04 05.89867	12 44 51.86	-02 04 35.0				046
2700	1983 04 05.88455	12 48 34.33	-03 43 48.3				046
2700	1983 04 05.89867	12 48 33.65	-03 43 44.4				046
2826	1983 04 16.96318	13 56 12.41	-09 53 32.6				046
2826	1983 04 16.97736	13 56 11.70	-09 53 32.6				046
1981 YS	1983 04 16.92985	14 12 10.14	+05 48 03.1		16.2		046
1981 YS	1983 04 16.94397	14 12 09.39	+05 48 04.0				046

1983 CA3	1983 04 05.81412	10 46 56.80	-00 55 51.6		046
1983 CA3	1983 04 05.82824	10 46 56.44	-00 55 46.9		046
1983 CB3	1983 03 31.80775	10 43 24.00	-00 34 20.0		046
1983 CB3	1983 03 31.82188	10 43 23.28	-00 34 15.9		046
1983 CB3	1983 04 05.81412	10 41 31.87	-00 22 05.3		046
1983 CB3	1983 04 05.82824	10 41 31.38	-00 22 02.5		046
1983 DG	1983 03 13.84365	10 49 02.54	+09 48 48.6		046
1983 GK *	1983 04 05.88455	12 40 10.30	-02 09 21.6	17.5	046
1983 GK	1983 04 05.89867	12 40 09.47	-02 09 19.4		046
1983 GL *	1983 04 05.88455	12 44 26.98	-01 25 40.9	17.2	046
1983 GL	1983 04 05.89867	12 44 26.21	-01 25 34.3		046
1983 GM *	1983 04 05.88455	12 47 30.95	-02 11 03.3	17.4	046
1983 GM	1983 04 05.89867	12 47 30.10	-02 11 00.8		046
1983 GN *	1983 04 05.88455	12 48 15.83	-04 22 49.8	17.0	046
1983 GN	1983 04 05.89867	12 48 15.08	-04 22 44.2		046
1983 GO *	1983 04 05.91979	12 59 51.11	-07 20 04.9	17.0	046
1983 GO	1983 04 05.93403	12 59 50.24	-07 19 56.7		046
1983 HS *	1983 04 16.85387	12 44 33.83	-06 42 27.6	17.0	046
1983 HS	1983 04 16.86799	12 44 33.14	-06 42 22.5		046
1983 HT *	1983 04 16.85387	12 49 20.92	-06 30 40.4	17.0	046
1983 HT	1983 04 16.86799	12 49 20.30	-06 30 31.9		046
1983 HU *	1983 04 16.96318	13 53 28.48	-11 56 59.3	17.2	046
1983 HU	1983 04 16.97736	13 53 27.76	-11 56 52.5		1 046
1983 HV *	1983 04 16.96318	13 59 50.50	-09 11 17.5	17.2	046
1983 HV	1983 04 16.97736	13 59 49.77	-09 11 10.6		046
1983 HW *	1983 04 16.96318	14 04 27.22	-10 15 10.0	16.9	046
1983 HW	1983 04 16.97736	14 04 26.46	-10 15 00.0		046

Note 1: at edge of plate.

OBSERVATIONS MADE AT THE CRIMEAN ASTROPHYSICAL OBSERVATORY BY L. G. KARACHKINA AND T. M. SMIRNOVA.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1982 TO	1982 10 14.89730	02 05 04.94	+22 21 05.0		16.0		095
1982 TO	1982 10 20.89098	01 58 33.04	+22 24 11.7		16.0		095
1982 TO	1982 10 21.87648	01 57 25.90	+22 24 00.2		16.0		095
1982 TO	1982 10 22.88892	01 56 16.58	+22 23 31.8		16.0		095
1982 TO	1982 10 24.93066	01 53 55.70	+22 21 55.5		16.0		095
1982 TO	1982 11 09.86054	01 36 33.20	+21 46 38.8				095
1982 TO	1982 11 11.82316	01 34 44.11	+21 40 20.2				095
1982 TO	1982 11 12.90587	01 33 46.80	+21 36 49.3				095
1982 YC1	1981 09 05.85972	22 03 26.63	+02 05 49.1		16.5	1	095
1982 YC1 *	1982 12 23.06172	06 27 20.50	+38 45 07.8		15.0		095
1982 YC1	1982 12 23.12456	06 27 15.58	+38 44 42.7		15.0		095
1982 YC1	1982 12 24.98363	06 24 45.13	+38 32 04.8		15.0		095
1982 YC1	1983 01 06.72289	06 07 53.03	+36 38 41.5		15.0		095
1982 YC1	1983 01 09.84944	06 04 09.12	+36 04 54.0		15.0		095
1982 YC1	1983 01 14.73123	05 58 55.86	+35 08 41.8		15.0		095
1983 AX2 *	1983 01 13.05174	08 51 26.90	+29 22 41.5		15.0	1	095
1983 AX2	1983 01 15.02700	08 49 22.54	+29 20 56.0		15.0		095
1983 AX2	1983 02 10.89720	08 20 31.05	+28 10 33.0		15.0		095
1983 AX2	1983 03 05.76557	08 05 43.69	+26 10 20.2		15.5		095

Note 1: near edge of plate.

OBSERVATIONS MADE AT CHIRORIN BY SEI. MEASURED BY T. URATA.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1983 JA *	1983 05 09.68229	16 19 17.3	-14 12 50		16	383
1983 JA	1983 05 09.70365	16 19 16.3	-14 12 48			383
1983 JA	1983 05 09.72500	16 19 15.3	-14 12 49			383

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.
358	1981 03	02.62373	11 41	16.37	+01	51 55.6	12.0V	413	
358	1981 03	03.56736	11 40	34.46	+01	57 33.4		413	
358	1981 03	07.60751	11 37	29.92	+02	22 05.5		413	
358	1981 03	07.64918	11 37	27.90	+02	22 19.8		413	
358	1981 03	11.60352	11 34	23.10	+02	46 48.4		413	
358	1981 03	11.64518	11 34	21.10	+02	47 03.3		413	
358	1981 03	16.69028	11 30	24.33	+03	18 15.9		413	
358	1981 03	16.73195	11 30	22.55	+03	18 28.6		413	
358	1981 03	29.52805	11 21	00.67	+04	32 39.1		413	
358	1981 03	29.56451	11 20	59.12	+04	32 50.6		413	
358	1981 04	07.51456	11 15	37.38	+05	16 00.9		413	
358	1981 04	07.54928	11 15	36.22	+05	16 09.8		413	
358	1981 04	08.53962	11 15	05.69	+05	20 20.2		413	
358	1981 04	11.56596	11 13	39.06	+05	32 17.9		413	
358	1981 04	11.60069	11 13	38.10	+05	32 25.0		413	
569	1981 03	02.57859	12 04	13.11	-02	12 40.4	13.5V	413	
569	1981 03	02.62373	12 04	10.99	-02	12 28.4		413	
569	1981 03	03.61076	12 03	25.00	-02	08 04.5		413	
569	1981 03	07.60751	12 00	10.57	-01	49 13.7		413	
569	1981 03	07.64918	12 00	08.43	-01	49 01.1		413	
569	1981 03	11.60352	11 56	46.49	-01	29 00.7		413	
569	1981 03	11.64518	11 56	44.24	-01	28 47.3		413	
569	1981 03	16.69028	11 52	19.05	-01	02 01.3		413	
569	1981 03	16.73195	11 52	16.62	-01	01 45.2		413	
569	1981 03	29.52805	11 41	21.19	+00	06 49.2		413	
569	1981 03	29.56451	11 41	19.36	+00	07 01.6		413	
569	1981 04	07.51456	11 34	45.80	+00	49 48.4		413	
569	1981 04	07.54928	11 34	44.41	+00	49 57.9		413	
569	1981 04	08.50490	11 34	07.38	+00	54 04.1		413	
569	1981 04	08.53962	11 34	06.07	+00	54 13.0		413	
569	1981 04	11.56596	11 32	16.39	+01	06 29.7		413	
569	1981 04	11.60069	11 32	15.19	+01	06 38.2		413	
658	1981 03	02.57859	12 00	18.25	-00	08 56.0	15.0V	413	
658	1981 03	02.62373	12 00	16.29	-00	08 45.2		413	
658	1981 03	03.56736	11 59	35.62	-00	04 48.9		413	
658	1981 03	03.61076	11 59	33.70	-00	04 37.4		413	
658	1981 03	07.60751	11 56	34.25	+00	12 47.0		413	
658	1981 03	07.64918	11 56	32.29	+00	12 58.0		413	
658	1981 03	11.60352	11 53	26.35	+00	31 05.4		413	
658	1981 03	11.64518	11 53	24.29	+00	31 17.1		413	
658	1981 03	16.69028	11 49	20.11	+00	55 09.4		413	
658	1981 03	16.73195	11 49	17.98	+00	55 22.8		413	
658	1981 03	29.52805	11 39	08.39	+01	55 08.7		413	
658	1981 03	29.56451	11 39	06.68	+01	55 18.7		413	
658	1981 04	07.51456	11 32	51.28	+02	31 49.6		413	
658	1981 04	07.54928	11 32	49.94	+02	31 57.8		413	
658	1981 04	08.50490	11 32	14.01	+02	35 26.5		413	
658	1981 04	08.53962	11 32	12.70	+02	35 34.2		413	
658	1981 04	11.56596	11 30	25.04	+02	45 55.1		413	
658	1981 04	11.60069	11 30	23.83	+02	46 02.5		413	
1242	1981 03	02.57859	12 03	05.73	-01	47 10.4	14.0V	413	
1242	1981 03	02.62373	12 03	03.47	-01	47 05.0		413	
1242	1981 03	03.56736	12 02	16.71	-01	44 57.8		413	

1242	1981	03	03.61076	12	02	14.58	-01	44	52.3	413
1242	1981	03	07.60751	11	58	49.39	-01	35	03.3	413
1242	1981	03	07.64918	11	58	47.19	-01	34	57.1	413
1242	1981	03	11.60352	11	55	16.18	-01	24	13.9	413
1242	1981	03	11.64518	11	55	13.88	-01	24	06.6	413
1242	1981	03	16.69028	11	50	38.22	-01	09	26.3	413
1242	1981	03	16.73195	11	50	35.75	-01	09	16.4	413
1242	1981	04	05.45665	11	33	33.60	-00	11	25.6	413
1242	1981	04	05.49137	11	33	32.04	-00	11	20.7	413
1242	1981	04	06.46361	11	32	48.07	-00	08	51.5	413
1242	1981	04	06.49834	11	32	46.55	-00	08	46.4	413
1242	1981	04	07.46608	11	32	03.73	-00	06	22.0	413
1242	1981	04	07.50080	11	32	02.28	-00	06	16.9	413
1242	1981	04	10.57562	11	29	52.55	+00	00	56.9	413
1242	1981	04	10.60479	11	29	51.40	+00	01	00.4	413
1242	1981	04	12.62048	11	28	31.98	+00	05	19.3	413
1242	1981	04	12.65521	11	28	30.59	+00	05	24.1	413
1561	1981	03	01.59302	12	21	24.56	-07	42	33.1	16.0V 413
1561	1981	03	01.63816	12	21	23.00	-07	42	24.9	413
1561	1981	03	06.66426	12	18	31.80	-07	24	53.5	413
1561	1981	03	06.70593	12	18	30.24	-07	24	44.3	413
1561	1981	03	08.68165	12	17	17.05	-07	16	53.9	413
1561	1981	03	08.72332	12	17	15.43	-07	16	43.1	413
1561	1981	03	12.58070	12	14	44.61	-07	00	01.3	413
1561	1981	03	12.61890	12	14	43.05	-06	59	51.2	413
1561	1981	04	06.61147	11	56	57.87	-04	43	58.7	413
1561	1981	04	06.64619	11	56	56.44	-04	43	46.8	413
1561	1981	04	08.55338	11	55	41.57	-04	32	52.4	413
1561	1981	04	08.58810	11	55	40.21	-04	32	40.8	413
1561	1981	04	09.50909	11	55	05.07	-04	27	27.5	413
1561	1981	04	09.54382	11	55	03.73	-04	27	15.7	413
1640	1981	03	02.62373	11	53	52.02	+01	07	19.4	18.0V 413
1640	1981	03	03.56736	11	53	00.33	+01	11	19.5	413
1640	1981	03	03.61076	11	52	58.08	+01	11	29.9	413
1640	1981	03	07.60751	11	49	12.70	+01	28	59.4	413
1640	1981	03	07.64918	11	49	10.45	+01	29	09.4	413
1640	1981	03	11.60352	11	45	19.55	+01	47	10.2	413
1640	1981	03	11.64518	11	45	17.13	+01	47	21.0	413
1640	1981	03	16.69028	11	40	16.58	+02	10	49.7	413
1640	1981	03	16.73195	11	40	14.30	+02	10	59.6	413
1640	1981	03	29.52805	11	27	49.07	+03	08	23.0	413
1640	1981	03	29.56451	11	27	47.04	+03	08	31.9	413
1640	1981	04	07.51456	11	20	04.98	+03	42	41.6	413
1640	1981	04	07.54928	11	20	03.35	+03	42	47.9	413
1640	1981	04	08.50490	11	19	18.51	+03	46	01.8	413
1640	1981	04	08.53962	11	19	17.03	+03	46	08.2	413
1640	1981	04	11.56596	11	17	01.75	+03	55	38.1	413
1640	1981	04	11.60069	11	17	00.45	+03	55	42.7	413
1718	1981	03	01.59302	12	12	02.35	-06	35	29.2	17.5V 413
1718	1981	03	01.63816	12	12	00.36	-06	35	15.3	413
1718	1981	03	06.66426	12	08	13.54	-06	05	35.6	413
1718	1981	03	06.70593	12	08	11.56	-06	05	21.5	413
1718	1981	03	08.68165	12	06	36.39	-05	52	38.8	413
1718	1981	03	08.72332	12	06	34.41	-05	52	23.3	413
1718	1981	03	12.58070	12	03	21.16	-05	26	05.3	413
1718	1981	03	12.61890	12	03	19.22	-05	25	50.7	413
1718	1981	04	05.55430	11	42	30.49	-02	19	53.2	413
1718	1981	04	06.56195	11	41	42.50	-02	12	02.0	413
1718	1981	04	10.52714	11	38	42.94	-01	41	48.2	413

1718		1981 04	10.56186	11 38	41.58	-01 41	36.3		413
1802		1981 03	02.57859	11 55	11.94	+02 43	33.2	15.0V	413
1802		1981 03	02.62373	11 55	10.05	+02 43	47.4		413
1802		1981 03	03.56736	11 54	30.13	+02 49	10.0		413
1802		1981 03	03.61076	11 54	28.32	+02 49	24.1		413
1802		1981 03	07.60751	11 51	32.56	+03 12	39.4		413
1802		1981 03	07.64918	11 51	30.66	+03 12	53.6		413
1802		1981 03	11.60352	11 48	28.98	+03 36	24.1		413
1802		1981 03	16.73195	11 44	27.22	+04 06	57.5		413
1802		1981 03	29.52805	11 34	40.47	+05 18	21.4		413
1802		1981 03	29.56451	11 34	38.89	+05 18	32.7		413
1802		1981 04	07.51456	11 28	46.12	+05 59	30.2		413
1802		1981 04	08.53962	11 28	10.52	+06 03	32.0		413
1802		1981 04	11.56596	11 26	31.99	+06 14	36.1		413
1802		1981 04	11.60069	11 26	30.92	+06 14	42.8		413
1824		1981 03	02.62373	11 56	10.09	+01 37	25.7	15.0V	413
1824		1981 03	03.56736	11 55	28.89	+01 41	27.8		413
1824		1981 03	07.60751	11 52	25.53	+01 59	16.2		413
1824		1981 03	07.64918	11 52	23.57	+01 59	27.0		413
1824		1981 03	11.60352	11 49	16.13	+02 17	31.6		413
1824		1981 03	11.64518	11 49	14.10	+02 17	43.3		413
1824		1981 03	16.69028	11 45	08.84	+02 41	08.6		413
1824		1981 03	29.52805	11 35	00.36	+03 37	46.9		413
1824		1981 03	29.56451	11 34	58.72	+03 37	55.7		413
1824		1981 04	07.51456	11 28	51.38	+04 10	25.7		413
1824		1981 04	07.54928	11 28	50.14	+04 10	32.6		413
1824		1981 04	08.50490	11 28	15.35	+04 13	31.0		413
1824		1981 04	08.53962	11 28	14.09	+04 13	37.8		413
1824		1981 04	11.56596	11 26	30.48	+04 22	19.4		413
1824		1981 04	11.60069	11 26	29.36	+04 22	24.6		413
2662		1981 03	02.57859	12 01	55.61	-01 29	10.0	16.5V	413
2662		1981 03	02.62373	12 01	53.32	-01 28	60.0		413
2662		1981 03	03.56736	12 01	04.53	-01 25	13.5		413
2662		1981 03	03.61076	12 01	02.39	-01 25	03.8		413
2662		1981 03	07.64918	11 57	24.43	-01 07	52.4		413
2662		1981 03	11.60352	11 53	40.86	-00 49	42.1		413
2662		1981 03	11.64518	11 53	38.51	-00 49	30.8		413
2662		1981 03	16.69028	11 48	45.92	-00 25	08.8		413
2662		1981 03	16.73195	11 48	43.46	-00 24	55.0		413
2662		1981 03	29.52805	11 36	47.66	+00 36	48.9		413
2662		1981 03	29.56451	11 36	45.79	+00 36	58.8		413
2662		1981 04	07.54928	11 29	43.34	+01 14	11.6		413
2662		1981 04	08.50490	11 29	04.15	+01 17	38.5		413
2662		1981 04	08.53962	11 29	02.85	+01 17	45.0		413
2662		1981 04	11.56596	11 27	07.87	+01 27	55.0		413
2662		1981 04	11.60069	11 27	06.66	+01 28	01.2		413
1981	EO	1981 03	02.57859	11 54	37.45	+01 35	04.6	17.0V	413
1981	EO	1981 03	02.62373	11 54	34.83	+01 34	58.5		413
1981	EO	1981 03	03.56736	11 53	36.06	+01 32	55.5		413
1981	EO	1981 03	07.60751	11 49	13.61	+01 24	40.1		413
1981	EO	1981 03	07.64918	11 49	10.88	+01 24	35.6		413
1981	EO	1981 03	11.60352	11 44	39.56	+01 17	03.8		413
1981	EO	1981 03	11.64518	11 44	36.66	+01 16	59.1		413
1981	EO	1981 03	16.69028	11 38	38.53	+01 07	48.2		413
1981	EO	1981 03	16.73195	11 38	35.54	+01 07	42.8		413
1981	EO	1981 03	29.52805	11 23	42.21	+00 43	25.3		413
1981	EO	1981 03	29.56451	11 23	39.89	+00 43	20.7		413
1981	EO	1981 04	12.62048	11 10	28.57	+00 08	10.5		413
1981	EO	1981 04	12.65521	11 10	27.38	+00 08	02.7		413

1981 ET	1981 03	02.57859	11 51	18.05	+02 38	32.1	17.0V	413
1981 ET	1981 03	03.56736	11 50	29.84	+02 41	38.0		413
1981 ET	1981 03	07.60751	11 47	06.57	+02 54	42.1		413
1981 ET	1981 03	11.60352	11 43	37.83	+03 08	05.4		413
1981 ET	1981 03	11.64518	11 43	35.68	+03 08	13.5		413
1981 ET	1981 03	16.73195	11 39	03.79	+03 25	27.7		413
1981 ET	1981 03	29.56451	11 27	48.43	+04 06	19.8		413
1981 ET	1981 04	07.54928	11 20	45.60	+04 29	08.1		413
1981 ET	1981 04	08.50490	11 20	04.52	+04 31	10.0		413
1981 ET	1981 04	08.53962	11 20	03.11	+04 31	12.8		413
1981 ET	1981 04	11.56596	11 17	59.21	+04 37	00.3		413
1981 ET	1981 04	11.60069	11 17	57.99	+04 37	03.3		413
1981 EU	1981 03	02.57859	11 52	35.63	+01 31	15.3	17.0V	413
1981 EU	1981 03	02.62373	11 52	33.83	+01 31	26.6		413
1981 EU	1981 03	03.61076	11 51	52.48	+01 36	27.0		413
1981 EU	1981 03	07.60751	11 48	58.96	+01 57	12.6		413
1981 EU	1981 03	07.64918	11 48	57.20	+01 57	25.1		413
1981 EU	1981 03	11.60352	11 45	58.98	+02 18	33.8		413
1981 EU	1981 03	11.64518	11 45	57.06	+02 18	46.3		413
1981 EU	1981 03	16.69028	11 42	05.68	+02 45	56.6		413
1981 EU	1981 03	16.73195	11 42	03.88	+02 46	08.9		413
1981 EU	1981 03	29.52805	11 32	42.34	+03 51	06.0		413
1981 EU	1981 04	07.51456	11 27	11.49	+04 28	40.8		413
1981 EU	1981 04	07.54928	11 27	10.53	+04 28	47.9		413
1981 EU	1981 04	08.50490	11 26	39.88	+04 32	15.2		413
1981 EU	1981 04	08.53962	11 26	38.84	+04 32	22.4		413
1981 EU	1981 04	11.56596	11 25	08.79	+04 42	30.8		413
1981 EU	1981 04	11.60069	11 25	07.89	+04 42	36.1		413
1981 EZ	1981 03	02.57859	11 57	09.91	+01 31	56.7	17.5V	413
1981 EZ	1981 03	02.62373	11 57	07.70	+01 32	09.1		413
1981 EZ	1981 03	03.56736	11 56	20.12	+01 36	46.0		413
1981 EZ	1981 03	03.61076	11 56	18.00	+01 36	58.4		413
1981 EZ	1981 03	07.60751	11 52	46.84	+01 57	19.6		413
1981 EZ	1981 03	07.64918	11 52	44.66	+01 57	31.5		413
1981 EZ	1981 03	11.60352	11 49	05.38	+02 18	29.5		413
1981 EZ	1981 03	11.64518	11 49	03.03	+02 18	41.8		413
1981 EZ	1981 03	16.69028	11 44	16.81	+02 45	41.7		413
1981 EZ	1981 03	16.73195	11 44	14.59	+02 45	54.4		413
1981 EZ	1981 03	29.52805	11 32	50.96	+03 48	14.2		413
1981 EZ	1981 03	29.56451	11 32	49.27	+03 48	22.9		413
1981 EZ	1981 04	07.51456	11 26	30.49	+04 20	27.5		413
1981 EZ	1981 04	07.54928	11 26	29.31	+04 20	33.5		413
1981 EZ	1981 04	08.50490	11 25	55.91	+04 23	13.6		413
1981 EZ	1981 04	08.53962	11 25	54.76	+04 23	18.5		413
1981 EZ	1981 04	11.56596	11 24	19.05	+04 30	39.7		413
1981 EZ	1981 04	11.60069	11 24	18.04	+04 30	44.4		413
1981 ED1	1981 03	07.60751	11 48	55.25	+03 46	51.9	17.5V	413
1981 ED1	1981 03	07.64918	11 48	52.81	+03 46	55.9		413
1981 ED1	1981 03	11.60352	11 44	57.82	+03 54	04.3		413
1981 ED1	1981 03	11.64518	11 44	55.39	+03 54	07.7		413
1981 ED1	1981 03	16.73195	11 39	49.79	+04 03	05.2		413
1981 ED1	1981 03	29.52805	11 27	35.52	+04 20	57.0		413
1981 ED1	1981 03	29.56451	11 27	33.69	+04 20	58.9		413
1981 ED1	1981 04	07.54928	11 20	17.43	+04 26	15.1		413
1981 ED1	1981 04	08.53962	11 19	35.14	+04 26	20.6		413
1981 ED1	1981 04	11.56596	11 17	33.57	+04 26	02.7		413
1981 ED1	1981 04	11.60069	11 17	32.46	+04 26	00.6		413
1981 EO11	1981 03	07.60751	11 45	34.76	-02 02	27.4	17.5V	413
1981 EO11	1981 03	07.64918	11 45	32.67	-02 02	17.7		413

1981	EO11	1981	03	11.60352	11	42	09.63	-01	44	11.3		413
1981	EO11	1981	03	11.64518	11	42	07.42	-01	44	00.4		413
1981	EO11	1981	03	16.69028	11	37	39.19	-01	18	36.3		413
1981	EO11	1981	03	16.73195	11	37	37.01	-01	18	23.1		413
1981	EO11	1981	03	29.52805	11	26	54.22	-00	11	00.4		413
1981	EO11	1981	03	29.56451	11	26	52.53	-00	10	49.6		413
1981	EO11	1981	04	07.54928	11	21	07.61	+00	30	33.0		413
1981	EO11	1981	04	08.50490	11	20	38.63	+00	34	22.1		413
1981	EO11	1981	04	08.53962	11	20	37.62	+00	34	28.3		413
1981	EO11	1981	04	11.56596	11	19	17.11	+00	45	34.1		413
1981	EO11	1981	04	11.60069	11	19	16.26	+00	45	40.3		413
1981	EE17*	1981	03	01.53473	11	47	20.70	-07	00	01.9	17.5V	413
1981	EE17	1981	03	01.57987	11	47	19.35	-06	58	35.8		413
1981	EE17	1981	03	07.70735	11	44	17.59	-03	22	29.1		413
1981	EE17	1981	03	11.60352	11	42	03.39	-00	54	29.7		413
1981	EE17	1981	03	11.64518	11	42	01.65	-00	52	55.5		413
1981	EE17	1981	03	16.69028	11	38	56.12	+02	25	37.8		413
1981	EF17*	1981	03	01.53473	11	50	06.61	-03	45	28.3	17.5V	413
1981	EF17	1981	03	01.57987	11	50	04.76	-03	45	10.8		413
1981	EF17	1981	03	07.66569	11	45	40.12	-02	56	53.6		413
1981	EF17	1981	03	07.70735	11	45	38.19	-02	56	33.7		413
1981	EF17	1981	03	11.58909	11	42	38.46	-02	23	20.7		413
1981	EF17	1981	03	15.64523	11	39	25.11	-01	47	09.8		413
1981	EF17	1981	03	15.68342	11	39	23.38	-01	46	50.3		413
1981	EF17	1981	04	07.54928	11	22	28.66	+01	40	12.0		413
1981	EF17	1981	04	08.50490	11	21	54.29	+01	48	10.5		413
1981	EF17	1981	04	08.53962	11	21	53.12	+01	48	25.8		413
1981	EF17	1981	04	11.56596	11	20	11.31	+02	12	51.9		413
1981	EF17	1981	04	11.60069	11	20	10.23	+02	13	06.4		413
1981	EG17*	1981	03	01.53473	11	54	01.86	-04	50	38.2	17.5V	413
1981	EG17	1981	03	01.57987	11	54	00.43	-04	50	10.0		413
1981	EG17	1981	03	07.70735	11	50	27.03	-03	35	13.0		413
1981	EG17	1981	03	11.54742	11	48	04.06	-02	45	48.3		413
1981	EG17	1981	03	15.64523	11	45	27.13	-01	51	51.5		413
1981	EG17	1981	03	15.68342	11	45	25.66	-01	51	22.6		413
1981	EG17	1981	04	07.51456	11	32	26.27	+02	59	25.0		413
1981	EG17	1981	04	07.54928	11	32	25.35	+02	59	51.1		413
1981	EG17	1981	04	08.50490	11	32	01.17	+03	10	40.8		413
1981	EH17*	1981	03	01.53473	12	01	51.64	-03	33	38.5	18.5V	413
1981	EH17	1981	03	01.57987	12	01	50.45	-03	33	26.2		413
1981	EH17	1981	03	11.54742	11	55	28.70	-02	30	42.5		413
1981	EH17	1981	03	15.68342	11	52	36.69	-02	02	10.5		413
1981	EH17	1981	04	05.55430	11	38	27.14	+00	26	13.3		413
1981	EH17	1981	04	05.58312	11	38	26.45	+00	26	18.2		413
1981	EH17	1981	04	06.56195	11	37	51.15	+00	32	59.0		413
1981	EJ17*	1981	03	01.53473	12	01	52.37	-04	24	01.1	17.0V	413
1981	EJ17	1981	03	01.57987	12	01	50.51	-04	23	40.6		413
1981	EJ17	1981	03	07.66569	11	57	05.55	-03	30	09.1		413
1981	EJ17	1981	03	07.70735	11	57	03.40	-03	29	46.1		413
1981	EJ17	1981	03	11.54742	11	53	47.10	-02	52	43.0		413
1981	EJ17	1981	03	11.58909	11	53	44.91	-02	52	20.0		413
1981	EJ17	1981	03	15.64523	11	50	09.39	-02	11	21.0		413
1981	EJ17	1981	03	15.68342	11	50	07.38	-02	10	58.1		413
1981	EJ17	1981	04	07.51456	11	32	01.86	+01	34	14.7		413
1981	EJ17	1981	04	07.54928	11	32	00.63	+01	34	32.4		413
1981	EJ17	1981	04	08.50490	11	31	27.81	+01	42	33.2		413
1981	EJ17	1981	04	11.56596	11	29	52.70	+02	06	51.4		413
1981	EJ17	1981	04	11.60069	11	29	51.71	+02	07	06.2		413
1981	EK17*	1981	03	01.59302	12	08	20.27	-05	56	27.8	18.0V	413

1981	EK17	1981	03	06.66426	12	04	45.34	-05	27	25.3	413
1981	EK17	1981	03	08.68165	12	03	12.69	-05	14	38.7	413
1981	EK17	1981	03	12.58070	12	00	05.32	-04	48	12.0	413
1981	EK17	1981	04	05.55430	11	40	05.54	-01	40	31.9	413
1981	EK17	1981	04	05.58312	11	40	04.62	-01	40	23.0	413
1981	EK17	1981	04	10.56186	11	36	36.87	-01	02	44.2	413
1981	EL17*	1981	03	01.59302	12	12	17.73	-08	03	25.8	19.0V 413
1981	EL17	1981	03	01.63816	12	12	16.25	-08	03	06.0	413
1981	EL17	1981	03	06.66426	12	09	19.84	-07	19	26.6	413
1981	EL17	1981	03	06.70593	12	09	18.48	-07	19	07.4	413
1981	EL17	1981	03	08.68165	12	08	02.36	-07	00	27.1	413
1981	EL17	1981	03	08.72332	12	08	00.81	-07	00	05.8	413
1981	EL17	1981	03	12.58070	12	05	23.96	-06	21	34.8	413
1981	EL17	1981	04	05.55430	11	48	13.70	-01	51	02.9	413
1981	EL17	1981	04	05.58312	11	48	12.50	-01	50	46.0	413
1981	EL17	1981	04	10.52714	11	45	16.67	-00	56	24.3	413
1981	EM17*	1981	03	01.63816	12	12	42.18	-05	39	38.8	18.5V 413
1981	EM17	1981	03	06.66426	12	09	09.51	-05	11	27.7	413
1981	EM17	1981	03	06.70593	12	09	07.73	-05	11	13.6	413
1981	EM17	1981	03	08.68165	12	07	39.11	-04	59	20.1	413
1981	EM17	1981	03	08.72332	12	07	37.42	-04	59	06.7	413
1981	EM17	1981	03	12.61890	12	04	36.24	-04	34	25.2	413
1981	EM17	1981	04	05.55430	11	45	30.81	-01	47	09.8	413
1981	EM17	1981	04	05.58312	11	45	29.65	-01	46	58.6	413
1981	EM17	1981	04	06.56195	11	44	46.86	-01	40	11.3	413
1981	EM17	1981	04	06.59668	11	44	45.52	-01	40	02.2	413
1981	EN17*	1981	03	01.59302	12	13	00.04	-05	43	35.9	17.5V 413
1981	EN17	1981	03	01.63816	12	12	58.02	-05	43	23.1	413
1981	EN17	1981	03	06.66426	12	08	59.35	-05	14	36.2	413
1981	EN17	1981	03	06.70593	12	08	57.39	-05	14	22.7	413
1981	EN17	1981	03	08.68165	12	07	17.17	-05	02	02.7	413
1981	EN17	1981	03	08.72332	12	07	15.12	-05	01	48.0	413
1981	EN17	1981	03	12.58070	12	03	52.16	-04	36	15.8	413
1981	EN17	1981	03	12.61890	12	03	50.26	-04	36	02.9	413
1981	EN17	1981	04	05.55430	11	42	25.60	-01	39	58.0	413
1981	EN17	1981	04	05.58312	11	42	24.49	-01	39	48.0	413
1981	EN17	1981	04	06.59668	11	41	36.32	-01	32	34.4	413
1981	EN17	1981	04	10.52714	11	38	40.85	-01	05	28.7	413
1981	EO17*	1981	03	01.59302	12	19	33.87	-05	26	17.0	17.5V 413
1981	EO17	1981	03	01.63816	12	19	31.88	-05	26	02.9	413
1981	EO17	1981	03	08.68165	12	13	46.60	-04	42	34.5	413
1981	EO17	1981	03	08.72332	12	13	44.33	-04	42	17.5	413
1981	EO17	1981	03	12.61890	12	10	13.88	-04	15	07.1	413
1981	EO17	1981	04	05.55430	11	48	10.79	-01	12	17.4	413
1981	EO17	1981	04	05.58312	11	48	09.57	-01	12	07.2	413
1981	EO17	1981	04	06.56195	11	47	22.56	-01	05	04.2	413
1981	EO17	1981	04	06.59668	11	47	20.98	-01	04	50.9	413
1981	EO17	1981	04	07.56303	11	46	35.85	-00	58	00.7	413
1981	EO17	1981	04	07.59776	11	46	34.55	-00	57	48.8	413
1981	EO17	1981	04	10.52714	11	44	24.97	-00	37	51.3	413
1981	EO17	1981	04	10.56186	11	44	23.61	-00	37	40.4	413
1981	EP17*	1981	03	01.59302	12	22	50.34	-08	20	58.9	16.0V 413
1981	EP17	1981	03	06.66426	12	20	07.11	-07	35	26.8	413
1981	EP17	1981	03	08.68165	12	18	54.20	-07	15	39.6	413
1981	EP17	1981	03	08.72332	12	18	52.57	-07	15	14.9	413
1981	EP17	1981	03	12.58070	12	16	22.30	-06	34	55.6	413
1981	EP17	1981	04	05.55430	11	58	43.97	-01	43	58.1	413
1981	EP17	1981	04	05.58312	11	58	42.88	-01	43	39.4	413
1981	EP17	1981	04	06.56195	11	58	02.53	-01	31	31.8	413

1981 EP17	1981 04 06.59668	11 58 01.09	-01 31 07.2	413
1981 EP17	1981 04 07.56303	11 57 22.22	-01 19 15.7	413
1981 EP17	1981 04 07.59776	11 57 20.85	-01 18 52.2	413
1981 EP17	1981 04 10.56186	11 55 26.96	-00 43 11.4	413
1981 EQ17*	1981 03 01.59302	12 27 10.18	-05 17 19.6	18.5V 413
1981 EQ17	1981 03 01.63816	12 27 08.61	-05 17 10.3	413
1981 EQ17	1981 03 08.72332	12 22 28.24	-04 45 52.9	413
1981 EQ17	1981 03 12.61890	12 19 27.40	-04 24 59.1	413
1981 EQ17	1981 04 05.58312	11 58 50.40	-01 51 14.9	413
1981 EQ17	1981 04 10.52714	11 55 13.38	-01 21 37.7	413
1981 ER17*	1981 03 02.57859	11 40 54.62	-02 08 39.4	18.0V 413
1981 ER17	1981 03 02.62373	11 40 52.92	-02 08 27.8	413
1981 ER17	1981 03 03.56736	11 40 14.27	-02 03 45.0	413
1981 ER17	1981 03 03.61076	11 40 12.58	-02 03 33.7	413
1981 ER17	1981 03 07.60751	11 37 25.55	-01 43 02.4	413
1981 ER17	1981 03 07.64918	11 37 23.82	-01 42 51.0	413
1981 ER17	1981 03 11.60352	11 34 34.83	-01 21 36.5	413
1981 ER17	1981 03 11.64518	11 34 33.02	-01 21 24.5	413
1981 ER17	1981 03 16.73195	11 30 54.57	-00 53 17.5	413
1981 ER17	1981 03 29.52805	11 22 12.55	+00 17 31.9	413
1981 ER17	1981 03 29.56451	11 22 11.19	+00 17 42.1	413
1981 ER17	1981 04 08.50490	11 16 30.81	+01 08 03.7	413
1981 ER17	1981 04 08.53962	11 16 29.92	+01 08 10.7	413
1981 ER17	1981 04 11.56596	11 15 02.66	+01 22 02.2	413
1981 ER17	1981 04 11.60069	11 15 01.86	+01 22 09.7	413
1981 ES17*	1981 03 02.57859	11 41 39.70	-01 16 06.7	19.0V 413
1981 ES17	1981 03 02.62373	11 41 37.73	-01 15 57.5	413
1981 ES17	1981 03 07.64918	11 37 40.56	-00 51 39.2	413
1981 ES17	1981 03 11.60352	11 34 27.44	-00 31 18.2	413
1981 ES17	1981 03 29.52805	11 20 12.32	+01 04 10.9	413
1981 ES17	1981 04 08.50490	11 13 40.77	+01 51 43.5	413
1981 ES17	1981 04 11.56596	11 12 01.16	+02 04 28.0	413
1981 ES17	1981 04 11.60069	11 12 00.07	+02 04 35.5	413
1981 ET17*	1981 03 02.62373	11 42 03.36	+00 00 54.7	18.0V 413
1981 ET17	1981 03 03.56736	11 41 14.20	+00 05 56.7	413
1981 ET17	1981 03 03.61076	11 41 11.91	+00 06 09.0	413
1981 ET17	1981 03 07.60751	11 37 39.63	+00 27 59.3	413
1981 ET17	1981 03 07.64918	11 37 37.23	+00 28 12.9	413
1981 ET17	1981 03 11.64518	11 34 01.03	+00 50 47.0	413
1981 ET17	1981 04 08.50490	11 12 25.75	+03 13 15.5	413
1981 ET17	1981 04 11.56596	11 10 52.58	+03 24 19.4	413
1981 ET17	1981 04 11.60069	11 10 51.84	+03 24 23.6	413
1981 EU17*	1981 03 02.57859	11 42 10.06	+01 29 21.3	16.5V 413
1981 EU17	1981 03 02.62373	11 42 08.00	+01 29 41.5	413
1981 EU17	1981 03 03.56736	11 41 23.04	+01 37 23.2	413
1981 EU17	1981 03 03.61076	11 41 21.07	+01 37 41.9	413
1981 EU17	1981 03 07.60751	11 38 05.72	+02 10 47.7	413
1981 EU17	1981 03 07.64918	11 38 03.72	+02 11 06.5	413
1981 EU17	1981 03 11.60352	11 34 45.68	+02 44 23.2	413
1981 EU17	1981 03 11.64518	11 34 43.65	+02 44 42.2	413
1981 EU17	1981 03 16.69028	11 30 30.44	+03 27 00.4	413
1981 EU17	1981 03 29.52805	11 20 35.61	+05 07 07.9	413
1981 EU17	1981 03 29.56451	11 20 34.08	+05 07 22.1	413
1981 EU17	1981 04 07.54928	11 15 04.43	+06 05 15.9	413
1981 EU17	1981 04 08.50490	11 14 34.95	+06 10 41.5	413
1981 EU17	1981 04 08.53962	11 14 34.00	+06 10 50.7	413
1981 EU17	1981 04 11.56596	11 13 08.98	+06 26 52.0	413
1981 EV17*	1981 03 02.57859	11 42 12.09	-01 04 50.1	19.5V 413
1981 EV17	1981 03 02.62373	11 42 09.88	-01 04 37.5	413

1981	EV17	1981	03	03.56736	11	41	23.20	-00	59	39.8		413
1981	EV17	1981	03	07.60751	11	37	53.62	-00	37	02.6		413
1981	EV17	1981	03	07.64918	11	37	51.48	-00	36	49.2		413
1981	EV17	1981	03	11.64518	11	34	13.91	-00	12	43.0		413
1981	EV17	1981	04	11.56596	11	09	19.75	+02	52	24.6		413
1981	EV17	1981	04	11.60069	11	09	18.75	+02	52	33.5		413
1981	EW17*	1981	03	02.57859	11	43	24.36	-00	45	27.2	18.0V	413
1981	EW17	1981	03	03.56736	11	42	32.47	-00	39	28.3		413
1981	EW17	1981	03	03.61076	11	42	30.21	-00	39	15.2		413
1981	EW17	1981	03	07.60751	11	38	54.36	-00	14	03.4		413
1981	EW17	1981	03	07.64918	11	38	52.16	-00	13	49.5		413
1981	EW17	1981	03	11.60352	11	35	12.57	+00	12	14.8		413
1981	EW17	1981	03	11.64518	11	35	10.17	+00	12	29.9		413
1981	EW17	1981	03	16.69028	11	30	29.29	+00	46	28.2		413
1981	EW17	1981	03	29.52805	11	19	33.03	+02	09	19.7		413
1981	EW17	1981	03	29.56451	11	19	31.42	+02	09	30.7		413
1981	EW17	1981	04	08.50490	11	13	04.03	+03	02	30.0		413
1981	EW17	1981	04	08.53962	11	13	02.91	+03	02	38.3		413
1981	EW17	1981	04	11.56596	11	11	33.72	+03	15	52.0		413
1981	EW17	1981	04	11.60069	11	11	32.88	+03	15	57.8		413
1981	EX17*	1981	03	02.57859	11	43	32.29	+02	08	53.7	18.5V	413
1981	EX17	1981	03	02.62373	11	43	29.98	+02	09	02.0		413
1981	EX17	1981	03	03.61076	11	42	39.09	+02	12	37.5		413
1981	EX17	1981	03	07.64918	11	39	00.77	+02	28	10.9		413
1981	EX17	1981	03	11.60352	11	35	15.66	+02	44	25.2		413
1981	EX17	1981	03	29.52805	11	18	36.07	+03	54	45.5		413
1981	EY17*	1981	03	02.57859	11	43	43.12	+01	52	06.6	17.5V	413
1981	EY17	1981	03	02.62373	11	43	40.78	+01	52	22.7		413
1981	EY17	1981	03	03.56736	11	42	52.42	+01	58	32.8		413
1981	EY17	1981	03	03.61076	11	42	50.34	+01	58	47.3		413
1981	EY17	1981	03	07.60751	11	39	19.54	+02	25	23.9		413
1981	EY17	1981	03	07.64918	11	39	17.29	+02	25	39.2		413
1981	EY17	1981	03	11.60352	11	35	43.46	+02	52	30.1		413
1981	EY17	1981	03	11.64518	11	35	41.15	+02	52	45.5		413
1981	EY17	1981	03	16.69028	11	31	06.91	+03	26	57.6		413
1981	EY17	1981	03	29.52805	11	20	19.48	+04	47	16.3		413
1981	EY17	1981	03	29.56451	11	20	17.94	+04	47	26.2		413
1981	EY17	1981	04	07.54928	11	14	15.36	+05	32	34.6		413
1981	EY17	1981	04	08.50490	11	13	42.68	+05	36	43.0		413
1981	EY17	1981	04	08.53962	11	13	41.61	+05	36	49.8		413
1981	EY17	1981	04	11.60069	11	12	05.86	+05	48	56.6		413
1981	EZ17*	1981	03	02.57859	11	43	46.89	-00	22	26.0	16.0V	413
1981	EZ17	1981	03	02.62373	11	43	45.16	-00	21	55.2		413
1981	EZ17	1981	03	03.56736	11	43	09.67	-00	10	14.2		413
1981	EZ17	1981	03	03.61076	11	43	07.97	-00	09	43.8		413
1981	EZ17	1981	03	07.60751	11	40	29.40	+00	41	16.0		413
1981	EZ17	1981	03	11.60352	11	37	41.88	+01	34	05.6		413
1981	EZ17	1981	03	11.64518	11	37	40.02	+01	34	37.7		413
1981	EZ17	1981	03	16.69028	11	34	02.50	+02	42	44.5		413
1981	EZ17	1981	03	16.73195	11	34	00.86	+02	43	15.1		413
1981	EZ17	1981	03	29.52805	11	25	19.76	+05	31	38.2		413
1981	EA18*	1981	03	02.57859	11	44	00.51	+01	49	08.1	18.5V	413
1981	EA18	1981	03	07.60751	11	40	42.50	+02	30	54.0		413
1981	EA18	1981	03	07.64918	11	40	40.79	+02	31	13.7		413
1981	EA18	1981	03	11.64518	11	37	56.67	+03	05	13.8		413
1981	EA18	1981	03	16.73195	11	34	24.94	+03	48	36.0		413
1981	EA18	1981	03	29.56451	11	25	57.64	+05	32	50.2		413
1981	EB18*	1981	03	02.62373	11	44	42.11	+01	02	36.9	19.0V	413
1981	EB18	1981	03	03.56736	11	44	01.12	+01	09	03.0		413

1981	EB18	1981	03	07.60751	11	40	56.08	+01	37	44.6		413
1981	EB18	1981	03	07.64918	11	40	54.13	+01	38	01.6		413
1981	EB18	1981	03	11.64518	11	37	41.23	+02	07	44.5		413
1981	EB18	1981	03	16.73195	11	33	29.12	+02	46	26.2		413
1981	EB18	1981	03	29.52805	11	23	21.64	+04	20	46.1		413
1981	EB18	1981	04	08.50490	11	17	05.22	+05	22	13.5		413
1981	EB18	1981	04	08.53962	11	17	04.05	+05	22	24.7		413
1981	EB18	1981	04	11.56596	11	15	36.39	+05	37	49.1		413
1981	EB18	1981	04	11.60069	11	15	35.57	+05	37	56.3		413
1981	EC18*	1981	03	02.57859	11	44	53.12	+00	51	36.1	20.0V	413
1981	EC18	1981	03	03.61076	11	44	13.01	+00	57	30.3		413
1981	EC18	1981	03	07.60751	11	41	33.50	+01	21	07.5		413
1981	EC18	1981	03	07.64918	11	41	31.68	+01	21	21.4		413
1981	EC18	1981	03	11.64518	11	38	45.99	+01	45	47.3		413
1981	EC18	1981	03	29.52805	11	26	28.42	+03	35	08.9		413
1981	EC18	1981	03	29.56451	11	26	27.16	+03	35	20.1		413
1981	ED18*	1981	03	02.57859	11	44	55.03	-00	02	56.0	17.5V	413
1981	ED18	1981	03	02.62373	11	44	53.06	-00	02	43.4		413
1981	ED18	1981	03	03.56736	11	44	12.38	+00	02	23.5		413
1981	ED18	1981	03	03.61076	11	44	10.50	+00	02	36.4		413
1981	ED18	1981	03	07.60751	11	41	11.98	+00	24	59.4		413
1981	ED18	1981	03	07.64918	11	41	10.18	+00	25	12.9		413
1981	ED18	1981	03	11.60352	11	38	06.81	+00	48	23.5		413
1981	ED18	1981	03	11.64518	11	38	04.94	+00	48	36.6		413
1981	ED18	1981	03	16.69028	11	34	06.99	+01	18	57.5		413
1981	ED18	1981	03	29.52805	11	24	29.91	+02	34	24.9		413
1981	ED18	1981	03	29.56451	11	24	28.38	+02	34	36.2		413
1981	ED18	1981	04	07.51456	11	18	54.28	+03	20	28.8		413
1981	ED18	1981	04	07.54928	11	18	53.14	+03	20	38.0		413
1981	ED18	1981	04	08.50490	11	18	22.33	+03	25	02.1		413
1981	ED18	1981	04	08.53962	11	18	21.43	+03	25	10.1		413
1981	ED18	1981	04	11.56596	11	16	51.29	+03	38	14.9		413
1981	ED18	1981	04	11.60069	11	16	50.48	+03	38	21.0		413
1981	EE18*	1981	03	02.62373	11	45	30.96	+02	19	12.2	19.0V	413
1981	EE18	1981	03	07.60751	11	41	39.49	+02	36	04.8		413
1981	EE18	1981	03	07.64918	11	41	37.65	+02	36	12.6		413
1981	EE18	1981	03	11.60352	11	38	27.76	+02	50	06.2		413
1981	EE18	1981	03	11.64518	11	38	26.00	+02	50	12.7		413
1981	EE18	1981	03	29.52805	11	24	37.77	+03	49	10.9		413
1981	EE18	1981	03	29.56451	11	24	36.30	+03	49	16.7		413
1981	EF18*	1981	03	02.57859	11	45	42.01	-00	33	54.1	17.5V	413
1981	EF18	1981	03	03.56736	11	44	52.04	-00	26	23.7		413
1981	EF18	1981	03	03.61076	11	44	49.99	-00	26	06.5		413
1981	EF18	1981	03	07.60751	11	41	21.18	+00	05	17.4		413
1981	EF18	1981	03	07.64918	11	41	18.98	+00	05	35.1		413
1981	EF18	1981	03	11.60352	11	37	44.99	+00	37	53.4		413
1981	EF18	1981	03	16.69028	11	33	06.20	+01	20	15.0		413
1981	EF18	1981	03	16.73195	11	33	04.19	+01	20	32.9		413
1981	EF18	1981	03	29.52805	11	22	04.45	+03	03	43.6		413
1981	EF18	1981	03	29.56451	11	22	02.74	+03	03	59.2		413
1981	EF18	1981	04	08.53962	11	15	13.68	+04	12	33.2		413
1981	EF18	1981	04	11.56596	11	13	35.73	+04	30	16.1		413
1981	EF18	1981	04	11.60069	11	13	34.79	+04	30	25.9		413
1981	EG18*	1981	03	02.62373	11	45	55.00	+00	46	19.9	18.5V	413
1981	EG18	1981	03	03.56736	11	45	01.12	+00	49	47.1		413
1981	EG18	1981	03	07.60751	11	41	02.48	+01	05	21.0		413
1981	EG18	1981	03	07.64918	11	41	00.07	+01	05	30.1		413
1981	EG18	1981	03	11.60352	11	36	56.95	+01	21	47.8		413
1981	EG18	1981	03	11.64518	11	36	54.38	+01	21	56.6		413

1981	EG18	1981	03	16.73195	11	31	35.59	+01	43	40.2		413
1981	EG18	1981	03	29.52805	11	18	53.63	+02	36	00.4		413
1981	EG18	1981	04	11.60069	11	08	53.03	+03	15	01.2		413
1981	EH18*	1981	03	02.57859	11	46	08.72	+02	19	52.1	19.0V	413
1981	EH18	1981	03	02.62373	11	46	06.93	+02	20	02.4		413
1981	EH18	1981	03	03.56736	11	45	30.33	+02	24	20.0		413
1981	EH18	1981	03	03.61076	11	45	28.72	+02	24	29.9		413
1981	EH18	1981	03	07.60751	11	42	49.53	+02	42	57.9		413
1981	EH18	1981	03	07.64918	11	42	47.99	+02	43	08.2		413
1981	EH18	1981	03	11.60352	11	40	05.75	+03	01	48.1		413
1981	EH18	1981	03	29.52805	11	27	54.72	+04	24	21.3		413
1981	EH18	1981	03	29.56451	11	27	53.26	+04	24	30.0		413
1981	EJ18*	1981	03	02.57859	11	46	13.60	+00	10	48.5	18.5V	413
1981	EJ18	1981	03	02.62373	11	46	11.74	+00	10	56.0		413
1981	EJ18	1981	03	03.56736	11	45	29.92	+00	13	59.5		413
1981	EJ18	1981	03	03.61076	11	45	28.03	+00	14	07.2		413
1981	EJ18	1981	03	07.60751	11	42	26.51	+00	27	40.0		413
1981	EJ18	1981	03	07.64918	11	42	24.67	+00	27	46.9		413
1981	EJ18	1981	03	11.60352	11	39	19.75	+00	41	54.9		413
1981	EJ18	1981	03	29.56451	11	25	41.78	+01	46	31.2		413
1981	EJ18	1981	04	08.50490	11	19	29.78	+02	16	07.8		413
1981	EJ18	1981	04	08.53962	11	19	28.70	+02	16	12.1		413
1981	EJ18	1981	04	11.56596	11	17	54.58	+02	23	34.0		413
1981	EJ18	1981	04	11.60069	11	17	53.64	+02	23	38.2		413
1981	EK18*	1981	03	02.62373	11	46	24.74	-00	02	13.1	16.5V	413
1981	EK18	1981	03	03.61076	11	45	44.06	+00	02	22.6		413
1981	EK18	1981	03	07.60751	11	42	53.74	+00	21	41.6		413
1981	EK18	1981	03	11.60352	11	39	57.35	+00	41	54.4		413
1981	EK18	1981	03	11.64518	11	39	55.52	+00	42	06.0		413
1981	EK18	1981	03	16.69028	11	36	09.31	+01	08	18.2		413
1981	EK18	1981	03	29.52805	11	27	03.26	+02	13	06.2		413
1981	EK18	1981	03	29.56451	11	27	01.79	+02	13	16.2		413
1981	EK18	1981	04	07.51456	11	21	47.65	+02	52	06.7		413
1981	EK18	1981	04	07.54928	11	21	46.66	+02	52	14.5		413
1981	EK18	1981	04	08.50490	11	21	17.82	+02	55	55.4		413
1981	EK18	1981	04	08.53962	11	21	16.90	+02	56	01.6		413
1981	EK18	1981	04	11.56596	11	19	52.61	+03	06	54.4		413
1981	EK18	1981	04	11.60069	11	19	51.69	+03	07	01.0		413
1981	EL18*	1981	03	02.57859	11	46	36.72	-02	25	21.8	18.0V	413
1981	EL18	1981	03	02.62373	11	46	34.77	-02	25	09.4		413
1981	EL18	1981	03	03.56736	11	45	52.62	-02	19	52.0		413
1981	EL18	1981	03	07.60751	11	42	43.54	-01	55	52.4		413
1981	EL18	1981	03	07.64918	11	42	41.50	-01	55	38.0		413
1981	EL18	1981	03	11.60352	11	39	25.89	-01	30	05.3		413
1981	EL18	1981	03	11.64518	11	39	23.70	-01	29	49.4		413
1981	EL18	1981	03	16.69028	11	35	06.04	-00	55	11.2		413
1981	EL18	1981	03	16.73195	11	35	04.11	-00	54	55.6		413
1981	EL18	1981	03	29.52805	11	24	34.50	+00	35	40.2		413
1981	EL18	1981	03	29.56451	11	24	32.69	+00	35	55.3		413
1981	EL18	1981	04	08.53962	11	17	58.30	+01	39	57.8		413
1981	EL18	1981	04	11.56596	11	16	25.03	+01	56	57.2		413
1981	EL18	1981	04	11.60069	11	16	24.04	+01	57	07.7		413
1981	EM18*	1981	03	02.57859	11	46	40.58	-01	11	50.4	16.0V	413
1981	EM18	1981	03	02.62373	11	46	37.99	-01	11	48.4		413
1981	EM18	1981	03	03.56736	11	45	44.87	-01	10	34.5		413
1981	EM18	1981	03	03.61076	11	45	42.37	-01	10	31.5		413
1981	EM18	1981	03	07.60751	11	41	46.81	-01	04	07.4		413
1981	EM18	1981	03	07.64918	11	41	44.29	-01	04	04.3		413
1981	EM18	1981	03	11.60352	11	37	40.00	-00	56	05.2		413

1981	EM18	1981	03	11.64518	11	37	37.40	-00	56	00.3		413
1981	EM18	1981	03	16.69028	11	32	19.04	-00	44	09.3		413
1981	EM18	1981	03	16.73195	11	32	16.52	-00	44	04.0		413
1981	EM18	1981	03	29.52805	11	19	38.96	-00	12	06.2		413
1981	EM18	1981	03	29.56451	11	19	37.00	-00	12	02.2		413
1981	EM18	1981	04	05.45665	11	14	06.16	+00	02	17.5		413
1981	EM18	1981	04	05.49137	11	14	04.79	+00	02	20.2		413
1981	EM18	1981	04	06.46361	11	13	24.37	+00	04	02.5		413
1981	EM18	1981	04	06.49834	11	13	23.00	+00	04	05.3		413
1981	EM18	1981	04	07.46608	11	12	44.56	+00	05	41.5		413
1981	EM18	1981	04	07.50080	11	12	43.26	+00	05	43.8		413
1981	EM18	1981	04	10.57562	11	10	52.73	+00	10	00.5		413
1981	EN18*	1981	03	02.57859	11	47	01.88	-02	40	56.1	19.0V	413
1981	EN18	1981	03	03.56736	11	46	23.55	-02	35	23.1		413
1981	EN18	1981	03	07.60751	11	43	41.00	-02	11	47.4		413
1981	EN18	1981	03	07.64918	11	43	39.26	-02	11	33.3		413
1981	EN18	1981	03	11.60352	11	40	53.44	-01	47	00.0		413
1981	EN18	1981	03	11.64518	11	40	51.79	-01	46	46.4		413
1981	EN18	1981	03	29.52805	11	28	33.32	+00	09	56.9		413
1981	EN18	1981	03	29.56451	11	28	32.08	+00	10	08.9		413
1981	EO18*	1981	03	02.57859	11	47	19.45	-00	05	45.0	17.0V	413
1981	EO18	1981	03	03.56736	11	46	26.77	-00	01	22.3		413
1981	EO18	1981	03	03.61076	11	46	24.49	-00	01	12.1		413
1981	EO18	1981	03	07.60751	11	42	44.26	+00	17	28.8		413
1981	EO18	1981	03	11.60352	11	38	56.03	+00	37	16.3		413
1981	EO18	1981	03	11.64518	11	38	53.67	+00	37	27.4		413
1981	EO18	1981	03	16.69028	11	34	01.33	+01	03	18.0		413
1981	EO18	1981	03	16.73195	11	33	59.15	+01	03	28.8		413
1981	EO18	1981	03	29.52805	11	22	19.87	+02	06	54.5		413
1981	EO18	1981	03	29.56451	11	22	18.19	+02	07	03.1		413
1981	EO18	1981	04	08.50490	11	15	03.24	+02	47	21.0		413
1981	EO18	1981	04	08.53962	11	15	02.02	+02	47	26.4		413
1981	EO18	1981	04	11.60069	11	13	15.87	+02	57	19.4		413
1981	EP18*	1981	03	02.57859	11	47	23.68	-01	51	40.1	18.0V	413
1981	EP18	1981	03	02.62373	11	47	21.96	-01	51	23.5		413
1981	EP18	1981	03	03.56736	11	46	47.17	-01	45	04.1		413
1981	EP18	1981	03	03.61076	11	46	45.53	-01	44	47.8		413
1981	EP18	1981	03	07.60751	11	44	11.35	-01	16	59.9		413
1981	EP18	1981	03	07.64918	11	44	09.71	-01	16	43.2		413
1981	EP18	1981	03	11.60352	11	41	29.76	-00	47	45.6		413
1981	EP18	1981	03	11.64518	11	41	28.12	-00	47	28.8		413
1981	EP18	1981	03	16.69028	11	37	58.42	-00	09	08.2		413
1981	EP18	1981	03	16.73195	11	37	56.82	-00	08	51.0		413
1981	EP18	1981	03	29.52805	11	29	22.29	+01	29	14.7		413
1981	EP18	1981	03	29.56451	11	29	20.96	+01	29	29.9		413
1981	EP18	1981	04	07.54928	11	24	17.00	+02	33	00.4		413
1981	EP18	1981	04	08.50490	11	23	49.13	+02	39	15.8		413
1981	EP18	1981	04	08.53962	11	23	48.19	+02	39	27.8		413
1981	EQ18*	1981	03	02.57859	11	47	32.38	+02	32	11.6	19.0V	413
1981	EQ18	1981	03	02.62373	11	47	30.72	+02	32	22.1		413
1981	EQ18	1981	03	07.60751	11	44	02.24	+02	57	15.6		413
1981	EQ18	1981	03	07.64918	11	44	00.37	+02	57	28.3		413
1981	EQ18	1981	03	11.60352	11	41	10.14	+03	17	34.0		413
1981	EQ18	1981	03	11.64518	11	41	08.43	+03	17	45.2		413
1981	EQ18	1981	04	07.51456	11	23	07.20	+05	20	54.9		413
1981	EQ18	1981	04	11.60069	11	21	01.11	+05	34	45.5		413
1981	ER18*	1981	03	02.57859	11	47	52.20	+00	21	58.2	18.0V	413
1981	ER18	1981	03	02.62373	11	47	49.75	+00	22	04.1		413
1981	ER18	1981	03	03.56736	11	46	59.18	+00	24	33.6		413

1981	ER18	1981	03	07.60751	11	43	15.46	+00	36	04.5		413
1981	ER18	1981	03	07.64918	11	43	13.14	+00	36	11.5		413
1981	ER18	1981	03	11.60352	11	39	26.50	+00	48	30.0		413
1981	ER18	1981	03	11.64518	11	39	24.16	+00	48	36.5		413
1981	ER18	1981	03	16.69028	11	34	32.29	+01	05	00.8		413
1981	ER18	1981	03	16.73195	11	34	30.13	+01	05	06.8		413
1981	ER18	1981	04	08.50490	11	16	10.40	+02	06	49.3		413
1981	ER18	1981	04	08.53962	11	16	09.33	+02	06	51.1		413
1981	ER18	1981	04	11.60069	11	14	32.69	+02	11	22.9		413
1981	ES18*	1981	03	02.62373	11	48	02.12	-01	13	19.5	19.0V	413
1981	ES18	1981	03	07.60751	11	44	12.54	-00	44	31.7		413
1981	ES18	1981	03	07.64918	11	44	10.54	-00	44	18.4		413
1981	ES18	1981	03	11.60352	11	40	52.15	-00	18	53.6		413
1981	ES18	1981	03	11.64518	11	40	49.89	-00	18	37.1		413
1981	ES18	1981	03	16.69028	11	36	25.79	+00	15	59.7		413
1981	ES18	1981	03	16.73195	11	36	23.68	+00	16	15.2		413
1981	ES18	1981	03	29.52805	11	25	37.67	+01	45	43.3		413
1981	ES18	1981	03	29.56451	11	25	36.09	+01	45	55.7		413
1981	ES18	1981	04	08.50490	11	19	08.96	+02	45	49.0		413
1981	ES18	1981	04	08.53962	11	19	07.84	+02	45	57.9		413
1981	ES18	1981	04	11.56596	11	17	42.57	+03	00	55.8		413
1981	ES18	1981	04	11.60069	11	17	41.62	+03	01	04.6		413
1981	ET18*	1981	03	02.57859	11	48	10.51	+00	05	39.8	18.5V	413
1981	ET18	1981	03	03.56736	11	47	19.85	+00	08	39.2		413
1981	ET18	1981	03	07.60751	11	43	44.99	+00	21	46.6		413
1981	ET18	1981	03	07.64918	11	43	42.80	+00	21	53.5		413
1981	ET18	1981	03	11.60352	11	40	04.90	+00	35	49.0		413
1981	ET18	1981	03	11.64518	11	40	02.51	+00	35	57.2		413
1981	ET18	1981	03	29.56451	11	24	14.88	+01	39	43.0		413
1981	ET18	1981	04	08.53962	11	17	35.93	+02	06	16.3		413
1981	EU18*	1981	03	02.57859	11	48	28.32	+01	34	53.8	18.0V	413
1981	EU18	1981	03	03.56736	11	47	47.40	+01	39	20.4		413
1981	EU18	1981	03	07.60751	11	44	54.14	+01	58	13.4		413
1981	EU18	1981	03	07.64918	11	44	52.32	+01	58	24.5		413
1981	EU18	1981	03	11.60352	11	41	55.96	+02	17	34.0		413
1981	EU18	1981	03	11.64518	11	41	54.05	+02	17	46.3		413
1981	EU18	1981	03	16.69028	11	38	03.56	+02	42	39.8		413
1981	EU18	1981	03	16.73195	11	38	01.84	+02	42	51.2		413
1981	EU18	1981	03	29.52805	11	28	29.50	+03	44	08.4		413
1981	EU18	1981	03	29.56451	11	28	28.01	+03	44	17.8		413
1981	EU18	1981	04	07.51456	11	22	36.50	+04	21	24.6		413
1981	EU18	1981	04	07.54928	11	22	35.24	+04	21	32.2		413
1981	EU18	1981	04	08.50490	11	22	01.67	+04	25	04.1		413
1981	EU18	1981	04	08.53962	11	22	00.28	+04	25	11.5		413
1981	EU18	1981	04	11.56596	11	20	19.40	+04	35	45.0		413
1981	EU18	1981	04	11.60069	11	20	18.49	+04	35	50.1		413
1981	EV18*	1981	03	02.62373	11	48	29.98	-02	28	33.6	19.0V	413
1981	EV18	1981	03	03.56736	11	47	51.78	-02	23	48.6		413
1981	EV18	1981	03	07.60751	11	45	02.39	-02	02	32.5		413
1981	EV18	1981	03	07.64918	11	45	00.58	-02	02	18.0		413
1981	EV18	1981	03	11.60352	11	42	07.68	-01	40	06.2		413
1981	EV18	1981	03	11.64518	11	42	05.69	-01	39	51.9		413
1981	EV18	1981	03	16.69028	11	38	19.73	-01	10	10.6		413
1981	EV18	1981	03	29.52805	11	29	01.39	+00	07	13.7		413
1981	EV18	1981	03	29.56451	11	29	00.13	+00	07	24.1		413
1981	EV18	1981	04	08.50490	11	22	53.13	+01	02	57.2		413
1981	EV18	1981	04	08.53962	11	22	51.90	+01	03	07.5		413
1981	EV18	1981	04	11.56596	11	21	18.67	+01	18	21.9		413
1981	EW18*	1981	03	02.62373	11	48	37.06	+00	40	23.5	18.5V	413

1981	EW18	1981	03	03.56736	11	47	44.74	+00	43	33.8	413
1981	EW18	1981	03	11.64518	11	39	48.74	+01	13	26.7	413
1981	EW18	1981	03	16.69028	11	34	39.81	+01	33	25.7	413
1981	EW18	1981	04	08.53962	11	13	46.30	+02	53	16.4	413
1981	EW18	1981	04	11.56596	11	11	40.99	+03	00	29.0	413
1981	EX18*	1981	03	02.62373	11	48	38.13	+01	36	45.4	16.0V 413
1981	EX18	1981	03	03.56736	11	48	00.11	+01	41	17.9	413
1981	EX18	1981	03	03.61076	11	47	58.39	+01	41	29.9	413
1981	EX18	1981	03	07.60751	11	45	11.43	+02	01	16.0	413
1981	EX18	1981	03	07.64918	11	45	09.64	+02	01	27.6	413
1981	EX18	1981	03	11.60352	11	42	17.61	+02	21	44.0	413
1981	EX18	1981	03	11.64518	11	42	15.76	+02	21	55.9	413
1981	EX18	1981	03	16.69028	11	38	30.74	+02	48	15.2	413
1981	EX18	1981	03	16.73195	11	38	29.13	+02	48	26.3	413
1981	EX18	1981	03	29.52805	11	29	11.09	+03	53	07.9	413
1981	EX18	1981	03	29.56451	11	29	09.58	+03	53	18.1	413
1981	EX18	1981	04	07.54928	11	23	26.82	+04	32	42.8	413
1981	EX18	1981	04	08.50490	11	22	54.16	+04	36	27.7	413
1981	EX18	1981	04	08.53962	11	22	53.02	+04	36	34.6	413
1981	EX18	1981	04	11.56596	11	21	15.49	+04	47	46.2	413
1981	EX18	1981	04	11.60069	11	21	14.46	+04	47	52.8	413
1981	EY18*	1981	03	02.62373	11	48	38.13	-02	44	50.3	17.5V 413
1981	EY18	1981	03	03.56736	11	47	44.89	-02	39	57.9	413
1981	EY18	1981	03	03.61076	11	47	42.49	-02	39	46.2	413
1981	EY18	1981	03	07.60751	11	43	49.28	-02	17	51.5	413
1981	EY18	1981	03	07.64918	11	43	46.80	-02	17	38.5	413
1981	EY18	1981	03	11.60352	11	39	47.86	-01	54	11.2	413
1981	EY18	1981	03	11.64518	11	39	45.40	-01	53	57.8	413
1981	EY18	1981	03	16.69028	11	34	37.14	-01	22	23.9	413
1981	EY18	1981	03	16.73195	11	34	34.80	-01	22	09.5	413
1981	EY18	1981	03	29.52805	11	22	28.27	-00	01	50.2	413
1981	EY18	1981	03	29.56451	11	22	26.37	-00	01	37.6	413
1981	EY18	1981	04	07.51456	11	15	45.42	+00	47	37.7	413
1981	EY18	1981	04	07.54928	11	15	44.18	+00	47	46.0	413
1981	EY18	1981	04	08.50490	11	15	08.70	+00	52	26.4	413
1981	EY18	1981	04	08.53962	11	15	07.63	+00	52	33.3	413
1981	EY18	1981	04	11.56596	11	13	25.29	+01	06	24.9	413
1981	EY18	1981	04	11.60069	11	13	24.27	+01	06	31.5	413
1981	EZ18*	1981	03	02.57859	11	48	44.18	-01	16	52.0	18.0V 413
1981	EZ18	1981	03	02.62373	11	48	42.04	-01	16	41.7	413
1981	EZ18	1981	03	03.56736	11	47	58.40	-01	12	27.6	413
1981	EZ18	1981	03	03.61076	11	47	56.53	-01	12	17.8	413
1981	EZ18	1981	03	07.60751	11	44	45.49	-00	53	32.7	413
1981	EZ18	1981	03	07.64918	11	44	43.50	-00	53	21.9	413
1981	EZ18	1981	03	11.60352	11	41	27.07	-00	33	39.2	413
1981	EZ18	1981	03	11.64518	11	41	24.95	-00	33	27.1	413
1981	EZ18	1981	03	16.69028	11	37	09.18	-00	07	11.8	413
1981	EZ18	1981	03	16.73195	11	37	07.38	-00	07	00.6	413
1981	EZ18	1981	03	29.52805	11	26	42.09	+00	59	50.5	413
1981	EZ18	1981	03	29.56451	11	26	40.10	+01	00	01.0	413
1981	EZ18	1981	04	08.50490	11	19	52.17	+01	46	07.8	413
1981	EZ18	1981	04	08.53962	11	19	50.86	+01	46	16.5	413
1981	EZ18	1981	04	11.56596	11	18	07.71	+01	58	24.5	413
1981	EA19*	1981	03	02.57859	11	48	54.14	+02	26	43.2	18.5V 413
1981	EA19	1981	03	02.62373	11	48	52.02	+02	26	54.9	413
1981	EA19	1981	03	03.61076	11	48	00.24	+02	31	39.3	413
1981	EA19	1981	03	07.60751	11	44	25.88	+02	51	15.6	413
1981	EA19	1981	03	07.64918	11	44	23.70	+02	51	26.7	413
1981	EA19	1981	03	11.60352	11	40	45.30	+03	11	16.7	413

1981	EA19	1981	03	11.64518	11	40	43.05	+03	11	28.2	413
1981	EA19	1981	03	16.73195	11	35	59.75	+03	36	53.5	413
1981	EA19	1981	03	29.52805	11	24	45.95	+04	35	25.4	413
1981	EA19	1981	03	29.56451	11	24	44.38	+04	35	32.8	413
1981	EA19	1981	04	08.50490	11	17	37.28	+05	10	06.2	413
1981	EB19*	1981	03	02.57859	11	48	56.49	+01	19	52.9	18.5V 413
1981	EB19	1981	03	02.62373	11	48	54.11	+01	20	07.6	413
1981	EB19	1981	03	03.56736	11	48	04.39	+01	26	11.1	413
1981	EB19	1981	03	07.60751	11	44	22.26	+01	53	02.7	413
1981	EB19	1981	03	07.64918	11	44	20.04	+01	53	17.1	413
1981	EB19	1981	03	11.60352	11	40	31.91	+02	20	44.1	413
1981	EB19	1981	03	16.69028	11	35	29.47	+02	56	54.0	413
1981	EB19	1981	03	29.56451	11	23	01.32	+04	25	41.0	413
1981	EB19	1981	04	08.53962	11	14	47.51	+05	24	02.9	413
1981	EB19	1981	04	11.56596	11	12	41.99	+05	38	56.9	413
1981	EC19*	1981	03	02.62373	11	48	58.40	+01	08	20.4	19.0V 413
1981	EC19	1981	03	03.56736	11	48	04.32	+01	11	53.6	413
1981	EC19	1981	03	07.60751	11	44	03.80	+01	27	52.6	413
1981	EC19	1981	03	07.64918	11	44	01.48	+01	28	00.8	413
1981	EC19	1981	03	11.64518	11	39	55.20	+01	44	39.6	413
1981	EC19	1981	03	29.52805	11	22	00.88	+02	57	21.6	413
1981	EC19	1981	04	08.50490	11	13	57.64	+03	27	59.7	413
1981	EC19	1981	04	08.53962	11	13	56.43	+03	28	02.9	413
1981	EC19	1981	04	11.56596	11	11	57.46	+03	34	58.8	413
1981	ED19*	1981	03	02.62373	11	49	07.99	+01	27	08.5	17.0V 413
1981	ED19	1981	03	03.56736	11	48	25.73	+01	32	31.7	413
1981	ED19	1981	03	03.61076	11	48	23.88	+01	32	45.8	413
1981	ED19	1981	03	07.60751	11	45	17.79	+01	56	17.8	413
1981	ED19	1981	03	07.64918	11	45	15.83	+01	56	31.3	413
1981	ED19	1981	03	11.60352	11	42	04.05	+02	20	36.6	413
1981	ED19	1981	03	11.64518	11	42	02.01	+02	20	50.7	413
1981	ED19	1981	03	16.69028	11	37	51.78	+02	52	02.0	413
1981	ED19	1981	03	16.73195	11	37	49.84	+02	52	15.9	413
1981	ED19	1981	03	29.52805	11	27	35.78	+04	08	14.5	413
1981	ED19	1981	03	29.56451	11	27	34.14	+04	08	26.2	413
1981	ED19	1981	04	07.51456	11	21	27.53	+04	53	41.8	413
1981	ED19	1981	04	07.54928	11	21	26.37	+04	53	49.9	413
1981	ED19	1981	04	08.50490	11	20	51.95	+04	58	07.7	413
1981	ED19	1981	04	11.56596	11	19	08.96	+05	10	56.2	413
1981	ED19	1981	04	11.60069	11	19	07.93	+05	11	03.3	413
1981	EE19*	1981	03	02.57859	11	49	08.71	-00	46	17.0	18.0V 413
1981	EE19	1981	03	02.62373	11	49	06.91	-00	46	05.2	413
1981	EE19	1981	03	03.56736	11	48	22.38	-00	40	49.9	413
1981	EE19	1981	03	03.61076	11	48	20.40	-00	40	37.0	413
1981	EE19	1981	03	07.60751	11	45	03.48	-00	17	15.2	413
1981	EE19	1981	03	07.64918	11	45	01.25	-00	17	01.1	413
1981	EE19	1981	03	11.60352	11	41	34.91	+00	07	46.9	413
1981	EE19	1981	03	16.73195	11	36	57.87	+00	41	30.6	413
1981	EE19	1981	03	29.52805	11	25	41.60	+02	06	34.2	413
1981	EE19	1981	04	11.56596	11	16	36.73	+03	20	06.5	413
1981	EE19	1981	04	11.60069	11	16	35.54	+03	20	15.5	413
1981	EF19*	1981	03	02.57859	11	49	14.92	-01	23	36.8	18.5V 413
1981	EF19	1981	03	02.62373	11	49	12.20	-01	23	27.2	413
1981	EF19	1981	03	03.61076	11	48	20.06	-01	19	25.4	413
1981	EF19	1981	03	07.60751	11	44	40.64	-01	02	02.0	413
1981	EF19	1981	03	07.64918	11	44	38.53	-01	01	54.5	413
1981	EF19	1981	03	11.60352	11	40	55.14	-00	43	30.3	413
1981	EF19	1981	03	11.64518	11	40	52.88	-00	43	19.9	413
1981	EF19	1981	03	16.69028	11	36	05.92	-00	18	51.3	413

1981	EF19	1981	03	29.52805	11	24	51.18	+00	41	52.9		413
1981	EG19*	1981	03	02.57859	11	49	16.21	-01	02	59.0	17.0V	413
1981	EG19	1981	03	02.62373	11	49	13.95	-01	02	43.8		413
1981	EG19	1981	03	03.61076	11	48	23.68	-00	56	43.7		413
1981	EG19	1981	03	07.60751	11	44	53.11	-00	31	26.0		413
1981	EG19	1981	03	07.64918	11	44	50.90	-00	31	10.9		413
1981	EG19	1981	03	11.60352	11	41	15.47	-00	05	01.0		413
1981	EG19	1981	03	11.64518	11	41	13.17	-00	04	45.4		413
1981	EG19	1981	03	16.69028	11	36	34.28	+00	29	32.6		413
1981	EG19	1981	03	16.73195	11	36	32.04	+00	29	47.8		413
1981	EG19	1981	03	29.56451	11	25	14.08	+01	55	34.6		413
1981	EG19	1981	04	07.51456	11	18	34.90	+02	48	29.3		413
1981	EG19	1981	04	07.54928	11	18	33.69	+02	48	38.9		413
1981	EG19	1981	04	08.53962	11	17	55.08	+02	53	57.1		413
1981	EG19	1981	04	11.56596	11	16	04.65	+03	09	17.5		413
1981	EG19	1981	04	11.60069	11	16	03.46	+03	09	27.3		413
1981	EH19*	1981	03	02.57859	11	49	23.94	+02	44	10.5	17.0V	413
1981	EH19	1981	03	03.56736	11	48	30.56	+02	47	43.4		413
1981	EH19	1981	03	03.61076	11	48	28.18	+02	47	53.3		413
1981	EH19	1981	03	07.60751	11	44	41.41	+03	03	02.9		413
1981	EH19	1981	03	07.64918	11	44	39.03	+03	03	11.4		413
1981	EH19	1981	03	11.60352	11	40	42.19	+03	19	00.6		413
1981	EH19	1981	03	11.64518	11	40	39.56	+03	19	10.1		413
1981	EH19	1981	03	16.69028	11	35	28.63	+03	39	33.7		413
1981	EH19	1981	03	16.73195	11	35	26.26	+03	39	41.5		413
1981	EH19	1981	03	29.52805	11	22	57.09	+04	25	21.6		413
1981	EH19	1981	03	29.56451	11	22	55.24	+04	25	27.5		413
1981	EH19	1981	04	07.51456	11	15	59.92	+04	45	52.7		413
1981	EH19	1981	04	07.54928	11	15	58.61	+04	45	55.2		413
1981	EH19	1981	04	08.50490	11	15	22.08	+04	47	20.8		413
1981	EH19	1981	04	08.53962	11	15	20.87	+04	47	22.7		413
1981	EJ19*	1981	03	02.57859	11	49	33.28	+01	40	37.4	17.5V	413
1981	EJ19	1981	03	02.62373	11	49	31.67	+01	40	47.6		413
1981	EJ19	1981	03	03.56736	11	48	53.72	+01	45	11.4		413
1981	EJ19	1981	03	03.61076	11	48	52.04	+01	45	22.1		413
1981	EJ19	1981	03	07.60751	11	46	05.74	+02	04	28.0		413
1981	EJ19	1981	03	07.64918	11	46	03.99	+02	04	39.0		413
1981	EJ19	1981	03	11.64518	11	43	10.57	+02	24	24.3		413
1981	EJ19	1981	03	16.69028	11	39	27.22	+02	49	39.6		413
1981	EJ19	1981	03	29.56451	11	30	19.54	+03	50	44.6		413
1981	EJ19	1981	04	08.50490	11	24	29.66	+04	29	05.6		413
1981	EJ19	1981	04	11.56596	11	23	01.95	+04	38	36.2		413
1981	EJ19	1981	04	11.60069	11	23	01.09	+04	38	41.7		413
1981	EK19*	1981	03	02.57859	11	49	36.45	-01	23	16.6	17.5V	413
1981	EK19	1981	03	03.56736	11	48	42.66	-01	20	18.6		413
1981	EK19	1981	03	07.60751	11	44	52.43	-01	06	52.8		413
1981	EK19	1981	03	07.64918	11	44	49.89	-01	06	44.5		413
1981	EK19	1981	03	11.60352	11	40	52.64	-00	52	01.3		413
1981	EK19	1981	03	11.64518	11	40	50.07	-00	51	52.3		413
1981	EK19	1981	03	16.69028	11	35	37.45	-00	31	27.3		413
1981	EK19	1981	03	16.73195	11	35	34.95	-00	31	18.4		413
1981	EK19	1981	03	29.52805	11	22	41.26	+00	22	34.8		413
1981	EK19	1981	04	08.50490	11	14	14.42	+00	59	22.3		413
1981	EK19	1981	04	11.56596	11	12	07.17	+01	08	37.5		413
1981	EK19	1981	04	11.60069	11	12	05.86	+01	08	42.0		413
1981	EL19*	1981	03	02.57859	11	49	56.58	-00	40	05.0	17.0V	413
1981	EL19	1981	03	02.62373	11	49	54.63	-00	39	49.7		413
1981	EL19	1981	03	03.56736	11	49	15.16	-00	33	58.9		413
1981	EL19	1981	03	07.60751	11	46	20.06	-00	08	16.0		413

1981	EL19	1981	03	07.64918	11	46	18.22	-00	08	00.8	413
1981	EL19	1981	03	11.64518	11	43	17.95	+00	18	30.5	413
1981	EL19	1981	03	16.69028	11	39	24.91	+00	52	57.2	413
1981	EL19	1981	03	16.73195	11	39	23.33	+00	53	10.1	413
1981	EL19	1981	03	29.52805	11	29	46.16	+02	20	08.8	413
1981	EL19	1981	03	29.56451	11	29	44.62	+02	20	22.0	413
1981	EL19	1981	04	07.51456	11	23	51.77	+03	15	51.4	413
1981	EL19	1981	04	07.54928	11	23	50.70	+03	16	01.4	413
1981	EL19	1981	04	08.50490	11	23	16.94	+03	21	31.4	413
1981	EL19	1981	04	08.53962	11	23	15.75	+03	21	41.5	413
1981	EL19	1981	04	11.56596	11	21	35.00	+03	38	20.2	413
1981	EL19	1981	04	11.60069	11	21	34.02	+03	38	29.9	413
1981	EM19*	1981	03	02.57859	11	50	04.84	+00	26	17.2	18.0V 413
1981	EM19	1981	03	02.62373	11	50	03.05	+00	26	26.4	413
1981	EM19	1981	03	03.56736	11	49	21.03	+00	30	32.7	413
1981	EM19	1981	03	03.61076	11	49	19.14	+00	30	42.7	413
1981	EM19	1981	03	07.60751	11	46	15.64	+00	48	39.7	413
1981	EM19	1981	03	07.64918	11	46	13.74	+00	48	49.5	413
1981	EM19	1981	03	11.60352	11	43	04.90	+01	07	26.4	413
1981	EM19	1981	03	16.69028	11	38	57.37	+01	31	58.6	413
1981	EM19	1981	03	29.52805	11	28	54.02	+02	32	15.9	413
1981	EM19	1981	03	29.56451	11	28	52.51	+02	32	24.6	413
1981	EM19	1981	04	07.54928	11	22	52.05	+03	08	34.4	413
1981	EM19	1981	04	08.50490	11	22	18.19	+03	11	57.3	413
1981	EM19	1981	04	08.53962	11	22	17.09	+03	12	04.5	413
1981	EM19	1981	04	11.56596	11	20	36.91	+03	22	07.2	413
1981	EM19	1981	04	11.60069	11	20	35.80	+03	22	13.3	413
1981	EN19*	1981	03	02.57859	11	50	12.48	-02	23	09.8	18.5V 413
1981	EN19	1981	03	02.62373	11	50	09.96	-02	22	52.6	413
1981	EN19	1981	03	03.56736	11	49	27.60	-02	17	33.6	413
1981	EN19	1981	03	03.61076	11	49	25.77	-02	17	20.7	413
1981	EN19	1981	03	07.60751	11	46	18.47	-01	53	35.8	413
1981	EN19	1981	03	07.64918	11	46	16.61	-01	53	22.3	413
1981	EN19	1981	03	11.60352	11	43	04.78	-01	28	32.5	413
1981	EN19	1981	03	11.64518	11	43	02.78	-01	28	18.5	413
1981	EN19	1981	03	16.73195	11	38	52.56	-00	55	14.4	413
1981	EN19	1981	03	29.52805	11	28	56.79	+00	27	44.3	413
1981	EN19	1981	03	29.56451	11	28	55.14	+00	27	57.6	413
1981	EO19*	1981	03	02.57859	11	50	17.88	-01	03	46.0	18.0V 413
1981	EO19	1981	03	02.62373	11	50	16.20	-01	03	31.9	413
1981	EO19	1981	03	03.56736	11	49	38.94	-00	57	03.3	413
1981	EO19	1981	03	03.61076	11	49	37.14	-00	56	45.8	413
1981	EO19	1981	03	07.60751	11	46	54.30	-00	28	41.1	413
1981	EO19	1981	03	07.64918	11	46	52.73	-00	28	25.7	413
1981	EO19	1981	03	11.64518	11	44	03.36	+00	00	42.5	413
1981	EO19	1981	03	16.69028	11	40	25.36	+00	38	21.3	413
1981	EO19	1981	03	16.73195	11	40	23.68	+00	38	36.9	413
1981	EO19	1981	03	29.52805	11	31	31.78	+02	12	40.4	413
1981	EO19	1981	03	29.56451	11	31	30.06	+02	12	59.0	413
1981	EO19	1981	04	08.53962	11	25	43.34	+03	18	21.0	413
1981	EO19	1981	04	11.60069	11	24	15.01	+03	36	11.3	413
1981	EP19*	1981	03	02.57859	11	50	18.30	+01	34	41.7	18.0V 413
1981	EP19	1981	03	03.56736	11	49	26.60	+01	41	46.1	413
1981	EP19	1981	03	03.61076	11	49	24.39	+01	42	02.7	413
1981	EP19	1981	03	07.60751	11	45	47.61	+02	11	23.5	413
1981	EP19	1981	03	07.64918	11	45	45.37	+02	11	40.4	413
1981	EP19	1981	03	11.60352	11	42	02.42	+02	41	31.5	413
1981	EP19	1981	03	11.64518	11	41	59.99	+02	41	49.3	413
1981	EP19	1981	03	16.73195	11	37	08.47	+03	20	24.5	413

1981 EP19	1981 03	29.52805	11 25	31.42	+04 51	32.1	413
1981 EP19	1981 04	08.50490	11 18	11.30	+05 48	51.3	413
1981 EP19	1981 04	08.53962	11 18	09.90	+05 49	00.9	413
1981 EP19	1981 04	11.56596	11 16	23.40	+06 03	03.3	413
1981 EQ19*	1981 03	02.57859	11 50	20.00	-00 38	53.2	18.0V 413
1981 EQ19	1981 03	02.62373	11 50	17.90	-00 38	39.3	413
1981 EQ19	1981 03	03.56736	11 49	30.13	-00 32	50.2	413
1981 EQ19	1981 03	07.60751	11 46	00.04	-00 07	11.8	413
1981 EQ19	1981 03	07.64918	11 45	57.92	-00 06	56.8	413
1981 EQ19	1981 03	11.60352	11 42	24.98	+00 19	13.8	413
1981 EQ19	1981 03	11.64518	11 42	22.77	+00 19	29.4	413
1981 EQ19	1981 03	16.69028	11 37	47.30	+00 53	40.7	413
1981 EQ19	1981 03	29.56451	11 26	33.75	+02 18	52.9	413
1981 EQ19	1981 04	08.50490	11 19	19.50	+03 16	03.0	413
1981 EQ19	1981 04	08.53962	11 19	18.37	+03 16	11.6	413
1981 EQ19	1981 04	11.56596	11 17	28.24	+03 31	14.6	413
1981 EQ19	1981 04	11.60069	11 17	27.34	+03 31	21.6	413
1981 ER19*	1981 03	02.57859	11 50	24.68	-00 00	05.0	18.0V 413
1981 ER19	1981 03	02.62373	11 50	22.94	+00 00	02.1	413
1981 ER19	1981 03	03.56736	11 49	38.13	+00 03	22.4	413
1981 ER19	1981 03	03.61076	11 49	36.30	+00 03	30.8	413
1981 ER19	1981 03	07.60751	11 46	21.06	+00 18	20.0	413
1981 ER19	1981 03	07.64918	11 46	19.02	+00 18	28.6	413
1981 ER19	1981 03	11.60352	11 42	57.79	+00 34	05.3	413
1981 ER19	1981 03	11.64518	11 42	55.65	+00 34	14.8	413
1981 ER19	1981 03	16.69028	11 38	32.77	+00 55	01.5	413
1981 ER19	1981 03	29.52805	11 27	44.12	+01 47	14.3	413
1981 ER19	1981 03	29.56451	11 27	42.40	+01 47	22.4	413
1981 ER19	1981 04	08.50490	11 20	37.34	+02 21	32.1	413
1981 ER19	1981 04	08.53962	11 20	36.22	+02 21	36.4	413
1981 ES19*	1981 03	02.57859	11 50	35.00	+01 14	54.3	20.0V 413
1981 ES19	1981 03	02.62373	11 50	32.94	+01 15	00.4	413
1981 ES19	1981 03	07.60751	11 45	43.31	+01 30	35.5	413
1981 ES19	1981 03	11.60352	11 41	37.88	+01 44	13.2	413
1981 ES19	1981 03	29.52805	11 23	25.80	+02 44	58.7	413
1981 ES19	1981 03	29.56451	11 23	23.66	+02 45	03.9	413
1981 ET19*	1981 03	02.62373	11 51	26.03	+03 00	02.9	19.5V 413
1981 ET19	1981 03	03.56736	11 50	41.47	+03 06	04.8	413
1981 ET19	1981 03	07.60751	11 47	21.62	+03 32	34.4	413
1981 ET19	1981 03	11.64518	11 43	49.36	+03 59	57.7	413
1981 ET19	1981 03	16.73195	11 39	12.49	+04 34	50.4	413
1981 ET19	1981 03	29.52805	11 27	51.04	+05 57	02.1	413
1981 ET19	1981 03	29.56451	11 27	49.43	+05 57	12.3	413
1981 EU19*	1981 03	02.57859	11 51	33.01	-00 03	58.8	17.0V 413
1981 EU19	1981 03	02.62373	11 51	30.58	-00 03	52.1	413
1981 EU19	1981 03	03.56736	11 50	38.94	-00 01	07.1	413
1981 EU19	1981 03	03.61076	11 50	36.44	-00 00	59.5	413
1981 EU19	1981 03	07.60751	11 46	46.84	+00 11	41.7	413
1981 EU19	1981 03	07.64918	11 46	44.37	+00 11	49.0	413
1981 EU19	1981 03	11.60352	11 42	44.54	+00 25	40.3	413
1981 EU19	1981 03	11.64518	11 42	42.10	+00 25	48.0	413
1981 EU19	1981 03	16.69028	11 37	25.53	+00 44	43.4	413
1981 EU19	1981 03	29.52805	11 24	17.78	+01 32	56.0	413
1981 EU19	1981 03	29.56451	11 24	15.53	+01 33	03.0	413
1981 EU19	1981 04	07.54928	11 16	26.58	+02 00	56.1	413
1981 EU19	1981 04	08.50490	11 15	43.15	+02 03	26.4	413
1981 EU19	1981 04	08.53962	11 15	41.66	+02 03	30.0	413
1981 EU19	1981 04	11.56596	11 13	33.51	+02 10	32.7	413
1981 EU19	1981 04	11.60069	11 13	32.31	+02 10	36.6	413

1981	EV19*	1981	03	02.57859	11	51	35.06	-00	48	28.2	19.5V	413
1981	EV19	1981	03	02.62373	11	51	33.62	-00	48	18.0		413
1981	EV19	1981	03	03.61076	11	50	55.01	-00	43	17.5		413
1981	EV19	1981	03	07.60751	11	48	14.16	-00	22	25.1		413
1981	EV19	1981	03	07.64918	11	48	12.33	-00	22	11.0		413
1981	EV19	1981	03	11.60352	11	45	28.01	-00	00	44.7		413
1981	EV19	1981	03	11.64518	11	45	26.36	-00	00	32.9		413
1981	EV19	1981	03	29.52805	11	33	06.87	+01	37	59.5		413
1981	EW19*	1981	03	02.57859	11	51	48.07	-01	38	04.4	19.0V	413
1981	EW19	1981	03	03.61076	11	50	49.53	-01	37	03.0		413
1981	EW19	1981	03	07.60751	11	46	51.17	-01	31	57.0		413
1981	EW19	1981	03	07.64918	11	46	48.77	-01	31	54.7		413
1981	EW19	1981	03	11.60352	11	42	39.84	-01	25	13.1		413
1981	EW19	1981	03	11.64518	11	42	37.27	-01	25	10.5		413
1981	EW19	1981	03	16.73195	11	37	06.14	-01	14	52.6		413
1981	EW19	1981	04	12.65521	11	11	58.37	-00	21	20.9		413
1981	EX19*	1981	03	02.57859	11	51	48.07	+00	04	19.7	18.0V	413
1981	EX19	1981	03	02.62373	11	51	45.96	+00	04	33.1		413
1981	EX19	1981	03	03.56736	11	50	54.27	+00	10	23.4		413
1981	EX19	1981	03	03.61076	11	50	51.97	+00	10	39.4		413
1981	EX19	1981	03	07.60751	11	47	05.29	+00	36	20.9		413
1981	EX19	1981	03	07.64918	11	47	02.97	+00	36	36.4		413
1981	EX19	1981	03	11.60352	11	43	07.96	+01	03	20.5		413
1981	EX19	1981	03	11.64518	11	43	05.41	+01	03	36.5		413
1981	EX19	1981	03	16.73195	11	37	54.92	+01	39	03.0		413
1981	EX19	1981	03	29.56451	11	25	10.08	+03	07	02.8		413
1981	EX19	1981	04	08.50490	11	16	45.57	+04	05	58.6		413
1981	EX19	1981	04	08.53962	11	16	44.11	+04	06	07.4		413
1981	EX19	1981	04	11.56596	11	14	35.31	+04	21	22.2		413
1981	EX19	1981	04	11.60069	11	14	34.20	+04	21	29.1		413
1981	EY19*	1981	03	02.57859	11	51	51.29	-00	50	44.6	19.0V	413
1981	EY19	1981	03	02.62373	11	51	49.72	-00	50	36.3		413
1981	EY19	1981	03	03.56736	11	51	08.95	-00	46	22.3		413
1981	EY19	1981	03	07.60751	11	48	08.68	-00	27	32.3		413
1981	EY19	1981	03	11.60352	11	45	02.73	-00	07	49.7		413
1981	EY19	1981	03	11.64518	11	45	00.80	-00	07	37.9		413
1981	EY19	1981	03	29.52805	11	31	04.45	+01	24	00.4		413
1981	EY19	1981	03	29.56451	11	31	02.89	+01	24	11.1		413
1981	EY19	1981	04	08.50490	11	24	28.92	+02	09	19.9		413
1981	EY19	1981	04	08.53962	11	24	27.67	+02	09	27.4		413
1981	EZ19*	1981	03	02.62373	11	51	59.59	-00	14	18.3	19.0V	413
1981	EZ19	1981	03	03.61076	11	51	10.78	-00	10	34.9		413
1981	EZ19	1981	03	07.60751	11	47	45.29	+00	05	16.2		413
1981	EZ19	1981	03	11.60352	11	44	10.25	+00	22	15.0		413
1981	EZ19	1981	03	16.69028	11	39	29.22	+00	44	51.3		413
1981	EZ19	1981	03	16.73195	11	39	27.29	+00	45	01.6		413
1981	EZ19	1981	04	11.56596	11	18	22.84	+02	28	53.6		413
1981	EA20*	1981	03	02.57859	11	52	22.15	+00	35	36.7	17.0V	413
1981	EA20	1981	03	02.62373	11	52	19.59	+00	35	49.9		413
1981	EA20	1981	03	03.56736	11	51	25.47	+00	40	32.3		413
1981	EA20	1981	03	07.64918	11	47	24.10	+01	01	35.3		413
1981	EA20	1981	03	11.60352	11	43	22.39	+01	22	52.5		413
1981	EA20	1981	03	11.64518	11	43	19.77	+01	23	05.8		413
1981	EA20	1981	03	16.69028	11	38	07.44	+01	50	42.7		413
1981	EA20	1981	03	16.73195	11	38	05.15	+01	50	53.8		413
1981	EA20	1981	03	29.52805	11	25	33.62	+02	57	19.6		413
1981	EA20	1981	03	29.56451	11	25	31.66	+02	57	30.0		413
1981	EA20	1981	04	07.51456	11	18	14.80	+03	35	24.3		413
1981	EA20	1981	04	07.54928	11	18	13.42	+03	35	32.1		413

1981	EA20	1981	04	08.50490	11	17	32.89	+03	39	00.4	413
1981	EA20	1981	04	08.53962	11	17	31.68	+03	39	05.9	413
1981	EA20	1981	04	11.56596	11	15	32.25	+03	49	11.2	413
1981	EA20	1981	04	11.60069	11	15	31.05	+03	49	16.9	413
1981	EB20*	1981	03	02.57859	11	52	35.85	-01	28	35.9	15.0V 413
1981	EB20	1981	03	03.56736	11	51	43.41	-01	23	31.0	413
1981	EB20	1981	03	07.60751	11	47	58.34	-01	01	14.1	413
1981	EB20	1981	03	07.64918	11	47	55.95	-01	01	00.9	413
1981	EB20	1981	03	11.60352	11	44	04.13	-00	37	21.8	413
1981	EB20	1981	03	11.64518	11	44	01.60	-00	37	07.0	413
1981	EB20	1981	03	16.69028	11	38	58.88	-00	05	23.3	413
1981	EB20	1981	03	16.73195	11	38	56.40	-00	05	07.5	413
1981	EB20	1981	03	29.52805	11	26	56.18	+01	14	19.9	413
1981	EB20	1981	03	29.56451	11	26	54.31	+01	14	31.8	413
1981	EB20	1981	04	07.51456	11	20	22.72	+02	00	56.4	413
1981	EB20	1981	04	07.54928	11	20	21.45	+02	01	05.2	413
1981	EB20	1981	04	08.50490	11	19	47.59	+02	05	19.7	413
1981	EB20	1981	04	08.53962	11	19	46.44	+02	05	27.5	413
1981	EB20	1981	04	11.56596	11	18	10.24	+02	17	45.1	413
1981	EB20	1981	04	11.60069	11	18	09.24	+02	17	51.6	413
1981	EC20*	1981	03	02.57859	11	52	35.97	-01	06	29.4	18.0V 413
1981	EC20	1981	03	02.62373	11	52	34.01	-01	06	17.4	413
1981	EC20	1981	03	03.61076	11	51	44.81	-01	01	14.9	413
1981	EC20	1981	03	07.60751	11	48	18.87	-00	39	50.3	413
1981	EC20	1981	03	07.64918	11	48	16.76	-00	39	37.4	413
1981	EC20	1981	03	11.60352	11	44	44.80	-00	17	16.1	413
1981	EC20	1981	03	16.69028	11	40	05.39	+00	12	34.1	413
1981	EC20	1981	03	29.52805	11	28	34.97	+01	28	19.5	413
1981	EC20	1981	03	29.56451	11	28	33.21	+01	28	30.5	413
1981	EC20	1981	04	08.50490	11	20	48.94	+02	21	14.2	413
1981	EC20	1981	04	08.53962	11	20	47.48	+02	21	23.6	413
1981	ED20*	1981	03	02.57859	11	52	39.77	+03	32	04.3	17.5V 413
1981	ED20	1981	03	03.56736	11	51	42.19	+03	35	55.0	413
1981	ED20	1981	03	07.60751	11	47	39.10	+03	52	07.0	413
1981	ED20	1981	03	07.64918	11	47	36.54	+03	52	16.4	413
1981	ED20	1981	03	11.60352	11	43	31.09	+04	08	21.4	413
1981	ED20	1981	03	11.64518	11	43	28.48	+04	08	30.0	413
1981	ED20	1981	03	16.69028	11	38	12.89	+04	28	32.0	413
1981	ED20	1981	03	29.56451	11	25	47.00	+05	11	24.1	413
1981	ED20	1981	04	07.51456	11	18	56.01	+05	29	38.8	413
1981	ED20	1981	04	07.54928	11	18	54.83	+05	29	41.2	413
1981	ED20	1981	04	11.56596	11	16	30.60	+05	33	59.3	413
1981	ED20	1981	04	11.60069	11	16	29.56	+05	34	00.3	413
1981	EE20*	1981	03	02.57859	11	52	44.92	+00	27	16.1	16.0V 413
1981	EE20	1981	03	02.62373	11	52	43.00	+00	27	28.2	413
1981	EE20	1981	03	03.56736	11	52	05.44	+00	31	43.9	413
1981	EE20	1981	03	03.61076	11	52	03.77	+00	31	55.6	413
1981	EE20	1981	03	07.60751	11	49	18.12	+00	50	38.1	413
1981	EE20	1981	03	07.64918	11	49	16.34	+00	50	49.4	413
1981	EE20	1981	03	11.60352	11	46	24.78	+01	10	13.2	413
1981	EE20	1981	03	16.69028	11	42	37.44	+01	35	54.5	413
1981	EE20	1981	03	16.73195	11	42	35.69	+01	36	06.7	413
1981	EE20	1981	03	29.56451	11	33	08.43	+02	40	25.4	413
1981	EE20	1981	04	07.51456	11	27	16.86	+03	20	26.8	413
1981	EE20	1981	04	07.54928	11	27	15.69	+03	20	35.0	413
1981	EE20	1981	04	08.50490	11	26	41.77	+03	24	29.1	413
1981	EE20	1981	04	11.56596	11	24	59.05	+03	36	16.7	413
1981	EE20	1981	04	11.60069	11	24	57.89	+03	36	24.3	413
1981	EF20*	1981	03	02.57859	11	52	45.34	+01	42	44.4	18.0V 413

1981 EF20	1981 03	02.62373	11 52	43.75	+01 43	04.6	413
1981 EF20	1981 03	03.56736	11 52	07.94	+01 51	06.6	413
1981 EF20	1981 03	03.61076	11 52	06.15	+01 51	30.2	413
1981 EF20	1981 03	07.60751	11 49	25.58	+02 26	33.2	413
1981 EF20	1981 03	07.64918	11 49	23.80	+02 26	54.4	413
1981 EF20	1981 03	11.60352	11 46	35.16	+03 02	37.8	413
1981 EF20	1981 03	11.64518	11 46	33.44	+03 02	59.2	413
1981 EF20	1981 03	16.69028	11 42	50.80	+03 49	03.1	413
1981 EF20	1981 03	29.52805	11 33	44.03	+05 40	27.3	413
1981 EG20*	1981 03	02.57859	11 53	23.48	-01 13	56.0	18.5V 413
1981 EG20	1981 03	02.62373	11 53	21.59	-01 13	51.7	413
1981 EG20	1981 03	03.56736	11 52	39.17	-01 11	11.4	413
1981 EG20	1981 03	03.61076	11 52	36.96	-01 11	05.7	413
1981 EG20	1981 03	07.60751	11 49	30.52	-00 59	08.1	413
1981 EG20	1981 03	07.64918	11 49	28.62	-00 59	00.7	413
1981 EG20	1981 03	11.60352	11 46	16.28	-00 46	11.5	413
1981 EG20	1981 03	16.69028	11 42	01.91	-00 28	41.6	413
1981 EG20	1981 03	16.73195	11 42	00.11	-00 28	34.9	413
1981 EG20	1981 03	29.52805	11 31	28.97	+00 16	47.4	413
1981 EG20	1981 04	08.50490	11 24	13.43	+00 48	43.2	413
1981 EG20	1981 04	08.53962	11 24	11.82	+00 48	49.5	413
1981 EG20	1981 04	11.56596	11 22	16.67	+00 57	11.4	413
1981 EG20	1981 04	11.60069	11 22	15.30	+00 57	18.3	413
1981 EH20*	1981 03	02.57859	11 53	47.42	-00 08	24.7	19.0V 413
1981 EH20	1981 03	02.62373	11 53	45.60	-00 08	12.2	413
1981 EH20	1981 03	03.56736	11 53	05.44	-00 02	57.3	413
1981 EH20	1981 03	07.60751	11 50	05.26	+00 20	29.4	413
1981 EH20	1981 03	07.64918	11 50	03.26	+00 20	45.1	413
1981 EH20	1981 03	11.64518	11 46	54.19	+00 45	17.5	413
1981 EH20	1981 03	16.69028	11 42	46.28	+01 17	31.5	413
1981 EH20	1981 03	29.52805	11 32	24.02	+02 39	18.5	413
1981 EH20	1981 03	29.56451	11 32	22.20	+02 39	33.5	413
1981 EH20	1981 04	08.53962	11 25	31.62	+03 35	05.0	413
1981 EH20	1981 04	11.56596	11 23	48.72	+03 49	30.8	413
1981 EJ20*	1981 03	02.57859	11 54	07.65	+02 43	42.3	18.0V 413
1981 EJ20	1981 03	02.62373	11 54	05.46	+02 43	47.3	413
1981 EJ20	1981 03	03.56736	11 53	15.46	+02 45	41.4	413
1981 EJ20	1981 03	03.61076	11 53	12.79	+02 45	48.7	413
1981 EJ20	1981 03	07.60751	11 49	32.51	+02 54	25.3	413
1981 EJ20	1981 03	07.64918	11 49	30.29	+02 54	30.2	413
1981 EJ20	1981 03	11.60352	11 45	43.82	+03 03	28.6	413
1981 EJ20	1981 03	11.64518	11 45	41.43	+03 03	33.7	413
1981 EJ20	1981 03	16.69028	11 40	47.26	+03 15	04.4	413
1981 EJ20	1981 03	16.73195	11 40	45.23	+03 15	08.4	413
1981 EJ20	1981 03	29.52805	11 28	51.62	+03 40	13.6	413
1981 EJ20	1981 03	29.56451	11 28	49.90	+03 40	17.1	413
1981 EJ20	1981 04	08.50490	11 21	10.85	+03 51	04.1	413
1981 EJ20	1981 04	11.56596	11 19	14.54	+03 52	15.8	413
1981 EK20*	1981 03	02.57859	11 54	10.16	+03 03	39.9	18.0V 413
1981 EK20	1981 03	03.56736	11 53	16.61	+03 05	01.9	413
1981 EK20	1981 03	07.60751	11 49	27.72	+03 11	12.7	413
1981 EK20	1981 03	07.64918	11 49	25.20	+03 11	16.6	413
1981 EK20	1981 03	11.60352	11 45	29.75	+03 17	46.8	413
1981 EK20	1981 03	11.64518	11 45	27.27	+03 17	50.1	413
1981 EK20	1981 03	16.69028	11 40	16.59	+03 26	13.9	413
1981 EK20	1981 03	16.73195	11 40	14.32	+03 26	17.5	413
1981 EK20	1981 03	29.52805	11 27	17.41	+03 43	54.4	413
1981 EK20	1981 03	29.56451	11 27	15.41	+03 43	55.4	413
1981 EK20	1981 04	07.51456	11 19	20.11	+03 49	08.9	413

1981 EK20	1981 04 07.54928	11 19 18.72	+03 49 08.9	413
1981 EK20	1981 04 08.50490	11 18 33.53	+03 49 14.0	413
1981 EK20	1981 04 08.53962	11 18 31.94	+03 49 13.6	413
1981 EK20	1981 04 11.56596	11 16 17.20	+03 48 45.3	413
1981 EK20	1981 04 11.60069	11 16 16.07	+03 48 44.8	413
1981 EL20*	1981 03 02.57859	11 54 12.81	-02 05 40.3	18.5V 413
1981 EL20	1981 03 02.62373	11 54 11.25	-02 05 36.9	413
1981 EL20	1981 03 03.56736	11 53 28.70	-02 03 41.6	413
1981 EL20	1981 03 03.61076	11 53 26.91	-02 03 37.7	413
1981 EL20	1981 03 07.60751	11 50 21.59	-01 54 44.8	413
1981 EL20	1981 03 07.64918	11 50 19.73	-01 54 39.6	413
1981 EL20	1981 03 11.60352	11 47 08.89	-01 44 50.8	413
1981 EL20	1981 03 11.64518	11 47 06.98	-01 44 44.3	413
1981 EL20	1981 03 16.69028	11 42 56.91	-01 31 04.2	413
1981 EL20	1981 03 16.73195	11 42 54.67	-01 30 55.4	413
1981 EL20	1981 04 05.45665	11 27 21.67	-00 35 05.5	413
1981 EL20	1981 04 05.49137	11 27 19.84	-00 34 58.3	413
1981 EL20	1981 04 06.46361	11 26 39.54	-00 32 28.8	413
1981 EL20	1981 04 06.49834	11 26 38.09	-00 32 24.3	413
1981 EL20	1981 04 12.62048	11 22 44.25	-00 18 04.4	413
1981 EL20	1981 04 12.65521	11 22 43.21	-00 18 00.6	413
1981 EM20*	1981 03 02.57859	11 54 22.11	+03 15 04.9	19.5V 413
1981 EM20	1981 03 03.61076	11 53 42.57	+03 17 26.2	413
1981 EM20	1981 03 07.64918	11 51 03.57	+03 26 50.0	413
1981 EM20	1981 03 11.60352	11 48 22.62	+03 36 20.3	413
1981 EM20	1981 03 11.64518	11 48 21.03	+03 36 24.8	413
1981 EM20	1981 03 16.73195	11 44 48.90	+03 48 39.7	413
1981 EM20	1981 03 29.52805	11 36 06.66	+04 16 22.7	413
1981 EN20*	1981 03 02.57859	11 54 22.22	+02 30 56.3	19.0V 413
1981 EN20	1981 03 03.56736	11 53 30.22	+02 38 26.4	413
1981 EN20	1981 03 03.61076	11 53 28.06	+02 38 43.8	413
1981 EN20	1981 03 07.60751	11 49 47.94	+03 09 55.0	413
1981 EN20	1981 03 07.64918	11 49 45.71	+03 10 12.0	413
1981 EN20	1981 03 11.60352	11 45 59.28	+03 41 27.8	413
1981 EN20	1981 03 11.64518	11 45 56.82	+03 41 46.2	413
1981 EN20	1981 03 29.52805	11 29 32.74	+05 50 21.8	413
1981 EN20	1981 03 29.56451	11 29 30.45	+05 50 38.6	413
1981 EO20*	1981 03 02.57859	11 54 31.11	+00 50 32.1	19.0V 413
1981 EO20	1981 03 02.62373	11 54 29.46	+00 50 45.1	413
1981 EO20	1981 03 03.61076	11 53 41.45	+00 57 19.2	413
1981 EO20	1981 03 07.60751	11 50 18.17	+01 24 54.5	413
1981 EO20	1981 03 07.64918	11 50 15.85	+01 25 13.6	413
1981 EO20	1981 03 11.64518	11 46 39.23	+01 54 16.1	413
1981 EO20	1981 03 16.69028	11 41 53.16	+02 32 21.1	413
1981 EO20	1981 03 29.52805	11 29 47.00	+04 08 06.9	413
1981 EO20	1981 03 29.56451	11 29 45.12	+04 08 21.8	413
1981 EO20	1981 04 07.51456	11 22 23.49	+05 06 38.1	413
1981 EO20	1981 04 07.54928	11 22 21.71	+05 06 52.0	413
1981 EO20	1981 04 08.50490	11 21 40.17	+05 12 26.0	413
1981 EO20	1981 04 11.56596	11 19 35.42	+05 29 06.3	413
1981 EP20*	1981 03 02.57859	11 54 40.24	+02 28 26.0	18.5V 413
1981 EP20	1981 03 03.61076	11 53 45.36	+02 33 50.5	413
1981 EP20	1981 03 07.60751	11 50 06.08	+02 55 18.9	413
1981 EP20	1981 03 07.64918	11 50 03.70	+02 55 31.2	413
1981 EP20	1981 03 11.60352	11 46 19.22	+03 17 15.5	413
1981 EP20	1981 03 16.69028	11 41 26.06	+03 45 08.1	413
1981 EP20	1981 03 16.73195	11 41 23.82	+03 45 19.8	413
1981 EP20	1981 03 29.56451	11 29 33.62	+04 50 22.1	413
1981 EP20	1981 04 08.50490	11 21 48.89	+05 29 58.6	413

1981	EP20	1981	04	08.53962	11	21	47.58	+05	30	03.7		413
1981	EP20	1981	04	11.56596	11	19	48.47	+05	39	35.4		413
1981	EP20	1981	04	11.60069	11	19	47.22	+05	39	39.8		413
1981	EQ20*	1981	03	02.62373	11	54	47.08	+00	17	31.2	19.0V	413
1981	EQ20	1981	03	07.60751	11	50	52.81	+00	47	24.6		413
1981	EQ20	1981	03	07.64918	11	50	50.82	+00	47	38.8		413
1981	EQ20	1981	03	11.60352	11	47	33.60	+01	12	39.9		413
1981	EQ20	1981	03	11.64518	11	47	31.30	+01	12	57.6		413
1981	EQ20	1981	03	16.69028	11	43	11.06	+01	45	54.0		413
1981	EQ20	1981	03	29.52805	11	32	18.95	+03	08	28.6		413
1981	EQ20	1981	03	29.56451	11	32	17.08	+03	08	42.3		413
1981	ER20*	1981	03	02.57859	11	55	16.43	-02	35	20.5	20.0V	413
1981	ER20	1981	03	03.56736	11	54	42.78	-02	28	27.9		413
1981	ER20	1981	03	07.60751	11	52	20.51	-01	59	31.7		413
1981	ER20	1981	03	07.64918	11	52	18.67	-01	59	10.7		413
1981	ER20	1981	03	11.60352	11	49	53.44	-01	29	43.2		413
1981	ER20	1981	03	29.52805	11	38	50.68	+00	47	22.8		413
1981	ER20	1981	03	29.56451	11	38	49.43	+00	47	37.5		413
1981	ES20*	1981	03	02.62373	11	55	16.88	-00	10	31.7	19.0V	413
1981	ES20	1981	03	03.56736	11	54	33.76	-00	06	39.4		413
1981	ES20	1981	03	03.61076	11	54	31.51	-00	06	24.8		413
1981	ES20	1981	03	11.60352	11	48	00.67	+00	29	29.5		413
1981	ES20	1981	03	11.64518	11	47	58.57	+00	29	40.3		413
1981	ES20	1981	03	16.69028	11	43	39.67	+00	53	49.6		413
1981	ES20	1981	03	29.52805	11	32	54.44	+01	54	44.6		413
1981	ET20*	1981	03	02.57859	11	55	36.84	+02	09	49.7	17.5V	413
1981	ET20	1981	03	02.62373	11	55	34.61	+02	09	50.0		413
1981	ET20	1981	03	03.56736	11	54	45.00	+02	10	12.2		413
1981	ET20	1981	03	03.61076	11	54	42.77	+02	10	12.5		413
1981	ET20	1981	03	07.60751	11	51	02.08	+02	12	18.9		413
1981	ET20	1981	03	07.64918	11	50	59.74	+02	12	20.2		413
1981	ET20	1981	03	11.60352	11	47	09.30	+02	15	05.3		413
1981	ET20	1981	03	16.69028	11	42	03.23	+02	18	58.0		413
1981	ET20	1981	03	16.73195	11	42	00.75	+02	18	59.5		413
1981	ET20	1981	03	29.56451	11	29	32.61	+02	26	02.1		413
1981	ET20	1981	04	08.50490	11	21	36.41	+02	23	42.2		413
1981	ET20	1981	04	08.53962	11	21	34.95	+02	23	39.2		413
1981	ET20	1981	04	11.56596	11	19	38.77	+02	20	55.7		413
1981	ET20	1981	04	11.60069	11	19	37.61	+02	20	53.0		413
1981	EU20*	1981	03	02.62373	11	55	47.97	-00	45	08.4	18.0V	413
1981	EU20	1981	03	03.61076	11	55	02.54	-00	40	38.9		413
1981	EU20	1981	03	07.60751	11	51	50.00	-00	21	28.7		413
1981	EU20	1981	03	07.64918	11	51	48.26	-00	21	18.7		413
1981	EU20	1981	03	11.60352	11	48	28.44	-00	01	09.0		413
1981	EU20	1981	03	11.64518	11	48	26.34	-00	00	56.8		413
1981	EU20	1981	03	16.69028	11	44	03.48	+00	25	50.8		413
1981	EU20	1981	03	16.73195	11	44	01.53	+00	26	03.9		413
1981	EU20	1981	03	29.52805	11	33	05.68	+01	34	18.0		413
1981	EU20	1981	04	08.50490	11	25	42.52	+02	21	21.8		413
1981	EU20	1981	04	08.53962	11	25	41.26	+02	21	28.4		413
1981	EU20	1981	04	11.60069	11	23	45.86	+02	33	55.4		413
1981	EV20*	1981	03	02.57859	11	55	54.07	-01	57	53.6	17.0V	413
1981	EV20	1981	03	02.62373	11	55	51.52	-01	57	49.6		413
1981	EV20	1981	03	03.56736	11	54	59.22	-01	55	52.3		413
1981	EV20	1981	03	03.61076	11	54	56.75	-01	55	46.6		413
1981	EV20	1981	03	07.60751	11	51	05.48	-01	46	21.0		413
1981	EV20	1981	03	07.64918	11	51	03.08	-01	46	15.3		413
1981	EV20	1981	03	11.60352	11	47	03.06	-01	35	21.1		413
1981	EV20	1981	03	11.64518	11	47	00.51	-01	35	14.2		413

1981	EV20	1981	03	16.69028	11	41	46.41	-01	19	44.7		413
1981	EV20	1981	04	05.45665	11	23	01.68	-00	17	41.6		413
1981	EV20	1981	04	05.49137	11	23	00.13	-00	17	37.2		413
1981	EV20	1981	04	06.46361	11	22	15.23	-00	15	04.1		413
1981	EV20	1981	04	06.49834	11	22	13.76	-00	14	59.1		413
1981	EV20	1981	04	07.46608	11	21	30.42	-00	12	31.7		413
1981	EV20	1981	04	07.50080	11	21	29.03	-00	12	27.4		413
1981	EV20	1981	04	10.57562	11	19	21.40	-00	05	18.7		413
1981	EV20	1981	04	10.60479	11	19	20.33	-00	05	16.2		413
1981	EV20	1981	04	12.62048	11	18	05.02	-00	01	10.1		413
1981	EV20	1981	04	12.65521	11	18	03.96	-00	01	07.7		413
1981	EW20*	1981	03	02.57859	11	55	58.74	+00	56	14.2	18.5V	413
1981	EW20	1981	03	03.56736	11	55	20.07	+01	00	16.9		413
1981	EW20	1981	03	03.61076	11	55	18.24	+01	00	28.7		413
1981	EW20	1981	03	07.60751	11	52	35.39	+01	17	31.3		413
1981	EW20	1981	03	07.64918	11	52	33.75	+01	17	40.1		413
1981	EW20	1981	03	11.64518	11	49	44.06	+01	35	22.2		413
1981	EW20	1981	03	16.69028	11	46	03.84	+01	58	14.3		413
1981	EW20	1981	03	16.73195	11	46	01.87	+01	58	25.8		413
1981	EW20	1981	03	29.52805	11	36	48.94	+02	55	19.7		413
1981	EW20	1981	03	29.56451	11	36	47.32	+02	55	29.6		413
1981	EW20	1981	04	08.50490	11	30	23.77	+03	34	10.6		413
1981	EW20	1981	04	08.53962	11	30	22.57	+03	34	17.8		413
1981	EW20	1981	04	11.56596	11	28	39.85	+03	44	29.6		413
1981	EW20	1981	04	11.60069	11	28	38.76	+03	44	36.6		413
1981	EX20*	1981	03	02.57859	11	56	06.81	+01	59	41.7	18.5V	413
1981	EX20	1981	03	03.56736	11	55	27.96	+02	07	05.4		413
1981	EX20	1981	03	07.60751	11	52	41.34	+02	38	01.9		413
1981	EX20	1981	03	07.64918	11	52	39.77	+02	38	19.1		413
1981	EX20	1981	03	11.60352	11	49	47.20	+03	09	33.8		413
1981	EX20	1981	03	11.64518	11	49	45.53	+03	09	50.8		413
1981	EX20	1981	03	16.69028	11	45	57.29	+03	50	12.7		413
1981	EX20	1981	03	16.73195	11	45	55.48	+03	50	31.8		413
1981	EX20	1981	03	29.52805	11	36	24.22	+05	29	03.8		413
1981	EX20	1981	03	29.56451	11	36	22.87	+05	29	17.4		413
1981	EX20	1981	04	08.50490	11	30	02.43	+06	34	39.5		413
1981	EX20	1981	04	08.53962	11	30	01.39	+06	34	49.7		413
1981	EX20	1981	04	11.60069	11	28	23.91	+06	51	57.6		413
1981	EY20*	1981	03	02.57859	11	56	08.69	-00	32	00.7	18.0V	413
1981	EY20	1981	03	03.56736	11	55	27.67	-00	27	55.1		413
1981	EY20	1981	03	03.61076	11	55	25.61	-00	27	42.9		413
1981	EY20	1981	03	07.60751	11	52	32.56	-00	10	23.9		413
1981	EY20	1981	03	16.69028	11	45	36.53	+00	31	52.0		413
1981	EY20	1981	03	16.73195	11	45	34.77	+00	32	02.7		413
1981	EY20	1981	03	29.52805	11	35	50.82	+01	32	24.9		413
1981	EY20	1981	03	29.56451	11	35	49.29	+01	32	34.5		413
1981	EY20	1981	04	08.50490	11	29	09.68	+02	14	26.3		413
1981	EY20	1981	04	08.53962	11	29	08.30	+02	14	34.1		413
1981	EY20	1981	04	11.56596	11	27	22.34	+02	25	45.2		413
1981	EY20	1981	04	11.60069	11	27	21.24	+02	25	52.1		413
1981	EZ20*	1981	03	02.57859	11	56	10.19	-00	53	28.6	19.0V	413
1981	EZ20	1981	03	03.56736	11	55	26.47	-00	48	37.4		413
1981	EZ20	1981	03	03.61076	11	55	24.23	-00	48	26.1		413
1981	EZ20	1981	03	07.60751	11	52	20.61	-00	27	48.7		413
1981	EZ20	1981	03	07.64918	11	52	18.71	-00	27	36.8		413
1981	EZ20	1981	03	11.60352	11	49	08.41	-00	06	07.9		413
1981	EZ20	1981	03	11.64518	11	49	06.45	-00	05	54.5		413
1981	EZ20	1981	03	29.56451	11	34	38.97	+01	34	17.8		413
1981	EZ20	1981	04	08.50490	11	27	53.00	+02	22	52.5		413

1981	EZ20	1981	04	11.56596	11	26	08.16	+02	35	45.6		413
1981	EA21*	1981	03	02.57859	11	56	11.51	-00	25	38.9	18.5V	413
1981	EA21	1981	03	03.56736	11	55	29.07	-00	21	26.4		413
1981	EA21	1981	03	03.61076	11	55	26.79	-00	21	12.4		413
1981	EA21	1981	03	07.60751	11	52	25.72	-00	03	06.2		413
1981	EA21	1981	03	07.64918	11	52	23.77	-00	02	54.6		413
1981	EA21	1981	03	11.60352	11	49	15.43	+00	16	07.9		413
1981	EA21	1981	03	16.73195	11	45	04.26	+00	41	47.7		413
1981	EA21	1981	03	29.56451	11	34	49.54	+01	45	27.2		413
1981	EB21*	1981	03	02.57859	11	56	11.55	-02	35	01.8	19.0V	413
1981	EB21	1981	03	02.62373	11	56	09.74	-02	34	53.1		413
1981	EB21	1981	03	03.61076	11	55	27.88	-02	31	09.8		413
1981	EB21	1981	03	07.60751	11	52	32.82	-02	15	13.4		413
1981	EB21	1981	03	11.60352	11	49	30.19	-01	58	01.2		413
1981	EB21	1981	03	11.64518	11	49	28.41	-01	57	51.4		413
1981	EB21	1981	03	16.73195	11	45	30.86	-01	34	43.4		413
1981	EB21	1981	04	07.46608	11	30	07.86	+00	02	50.8		413
1981	EB21	1981	04	12.62048	11	27	23.88	+00	21	51.9		413
1981	EB21	1981	04	12.65521	11	27	22.78	+00	21	59.6		413
1981	EC21*	1981	03	02.62373	11	56	14.79	+03	23	00.7	18.0V	413
1981	EC21	1981	03	03.61076	11	55	24.30	+03	26	46.6		413
1981	EC21	1981	03	07.60751	11	51	52.20	+03	42	23.8		413
1981	EC21	1981	03	07.64918	11	51	50.05	+03	42	32.0		413
1981	EC21	1981	03	11.60352	11	48	12.31	+03	58	17.0		413
1981	EC21	1981	03	11.64518	11	48	10.06	+03	58	26.1		413
1981	EC21	1981	03	16.69028	11	43	27.74	+04	18	15.2		413
1981	EC21	1981	03	16.73195	11	43	25.32	+04	18	23.8		413
1981	EC21	1981	03	29.56451	11	32	01.90	+05	02	24.7		413
1981	EC21	1981	04	07.51456	11	25	25.00	+05	23	25.8		413
1981	EC21	1981	04	07.54928	11	25	23.73	+05	23	29.2		413
1981	EC21	1981	04	08.50490	11	24	46.87	+05	25	07.9		413
1981	EC21	1981	04	11.60069	11	22	56.69	+05	29	32.9		413
1981	ED21*	1981	03	02.57859	11	56	31.42	-01	26	01.5	17.5V	413
1981	ED21	1981	03	02.62373	11	56	28.84	-01	25	58.1		413
1981	ED21	1981	03	03.56736	11	55	32.00	-01	24	17.8		413
1981	ED21	1981	03	03.61076	11	55	29.30	-01	24	13.4		413
1981	ED21	1981	03	07.60751	11	51	21.74	-01	16	13.1		413
1981	ED21	1981	03	07.64918	11	51	19.25	-01	16	08.6		413
1981	ED21	1981	03	11.60352	11	47	08.40	-01	07	03.4		413
1981	ED21	1981	03	11.64518	11	47	05.78	-01	06	57.9		413
1981	ED21	1981	03	16.69028	11	41	45.00	-00	54	16.8		413
1981	ED21	1981	03	16.73195	11	41	42.58	-00	54	10.5		413
1981	ED21	1981	03	29.52805	11	29	08.54	-00	21	39.9		413
1981	ED21	1981	03	29.56451	11	29	06.64	-00	21	34.8		413
1981	ED21	1981	04	05.45665	11	23	29.76	-00	06	53.0		413
1981	ED21	1981	04	05.49137	11	23	28.23	-00	06	50.1		413
1981	ED21	1981	04	06.46361	11	22	45.88	-00	05	02.5		413
1981	ED21	1981	04	06.49834	11	22	44.53	-00	04	59.4		413
1981	ED21	1981	04	07.46608	11	22	03.77	-00	03	17.6		413
1981	ED21	1981	04	07.50080	11	22	02.42	-00	03	13.6		413
1981	ED21	1981	04	12.62048	11	18	50.97	+00	04	15.0		413
1981	ED21	1981	04	12.65521	11	18	49.99	+00	04	16.5		413
1981	EE21*	1981	03	02.62373	11	56	43.19	-01	59	30.6	19.0V	413
1981	EE21	1981	03	03.56736	11	56	04.21	-01	52	26.5		413
1981	EE21	1981	03	03.61076	11	56	02.16	-01	52	03.0		413
1981	EE21	1981	03	11.60352	11	50	10.56	-00	48	48.6		413
1981	EE21	1981	03	11.64518	11	50	08.72	-00	48	30.8		413
1981	EE21	1981	03	16.73195	11	46	15.75	-00	06	35.2		413
1981	EE21	1981	03	29.52805	11	36	44.87	+01	38	06.6		413

1981	EF21*	1981	03	02.62373	11	56	46.74	+01	03	56.7	18.5V	413
1981	EF21	1981	03	07.60751	11	53	27.56	+01	53	01.3		413
1981	EF21	1981	03	11.64518	11	50	32.92	+02	34	18.8		413
1981	EF21	1981	03	16.69028	11	46	45.13	+03	26	48.9		413
1981	EF21	1981	03	29.52805	11	37	19.55	+05	34	53.1		413
1981	EG21*	1981	03	02.57859	11	56	53.24	+02	18	08.4	19.0V	413
1981	EG21	1981	03	02.62373	11	56	52.00	+02	18	19.2		413
1981	EG21	1981	03	07.60751	11	53	48.81	+02	45	19.6		413
1981	EG21	1981	03	07.64918	11	53	47.37	+02	45	32.1		413
1981	EG21	1981	03	11.64518	11	51	13.66	+03	07	44.0		413
1981	EG21	1981	03	16.69028	11	47	55.54	+03	35	46.8		413
1981	EG21	1981	03	29.52805	11	39	38.41	+04	44	16.3		413
1981	EG21	1981	03	29.56451	11	39	36.98	+04	44	28.6		413
1981	EG21	1981	04	11.56596	11	32	25.38	+05	42	25.2		413
1981	EH21*	1981	03	02.62373	11	56	54.75	-01	43	36.2	17.5V	413
1981	EH21	1981	03	03.56736	11	56	22.62	-01	34	53.2		413
1981	EH21	1981	03	03.61076	11	56	21.20	-01	34	30.6		413
1981	EH21	1981	03	07.60751	11	53	59.16	-00	56	45.6		413
1981	EH21	1981	03	07.64918	11	53	57.74	-00	56	23.9		413
1981	EH21	1981	03	11.60352	11	51	30.11	-00	17	44.8		413
1981	EH21	1981	03	11.64518	11	51	28.58	-00	17	22.2		413
1981	EH21	1981	03	16.69028	11	48	14.02	+00	33	07.0		413
1981	EH21	1981	03	16.73195	11	48	12.42	+00	33	31.1		413
1981	EH21	1981	03	29.52805	11	40	03.96	+02	41	30.4		413
1981	EH21	1981	03	29.56451	11	40	02.70	+02	41	50.2		413
1981	EH21	1981	04	07.51456	11	34	59.85	+04	05	30.6		413
1981	EH21	1981	04	07.54928	11	34	58.81	+04	05	47.0		413
1981	EH21	1981	04	08.53962	11	34	28.73	+04	14	30.8		413
1981	EH21	1981	04	11.56596	11	33	01.65	+04	40	25.6		413
1981	EH21	1981	04	11.60069	11	33	00.73	+04	40	41.4		413
1981	EJ21*	1981	03	02.57859	11	56	56.23	+02	31	51.3	19.0V	413
1981	EJ21	1981	03	03.56736	11	56	25.77	+02	38	02.9		413
1981	EJ21	1981	03	07.60751	11	54	15.62	+03	04	03.8		413
1981	EJ21	1981	03	07.64918	11	54	14.25	+03	04	19.7		413
1981	EJ21	1981	03	11.60352	11	52	00.11	+03	30	17.3		413
1981	EJ21	1981	03	11.64518	11	51	58.66	+03	30	33.7		413
1981	EJ21	1981	03	29.56451	11	41	35.53	+05	25	33.6		413
1981	EK21*	1981	03	02.57859	11	57	28.03	-01	13	35.5	18.5V	413
1981	EK21	1981	03	02.62373	11	57	25.62	-01	13	31.5		413
1981	EK21	1981	03	03.56736	11	56	40.65	-01	11	43.7		413
1981	EK21	1981	03	07.60751	11	53	18.24	-01	03	06.4		413
1981	EK21	1981	03	07.64918	11	53	16.14	-01	03	01.3		413
1981	EK21	1981	03	11.60352	11	49	47.40	-00	53	20.9		413
1981	EK21	1981	03	11.64518	11	49	45.25	-00	53	14.8		413
1981	EK21	1981	03	16.73195	11	45	07.58	-00	39	36.2		413
1981	EK21	1981	04	06.46361	11	27	18.70	+00	16	24.5		413
1981	EK21	1981	04	06.49834	11	27	17.30	+00	16	28.3		413
1981	EK21	1981	04	12.62048	11	23	11.01	+00	28	37.7		413
1981	EK21	1981	04	12.65521	11	23	09.97	+00	28	41.2		413
1981	EL21*	1981	03	02.57859	11	57	39.11	-01	45	35.0	17.5V	413
1981	EL21	1981	03	02.62373	11	57	37.04	-01	45	22.3		413
1981	EL21	1981	03	03.56736	11	56	56.41	-01	40	43.2		413
1981	EL21	1981	03	07.60751	11	53	54.80	-01	19	52.4		413
1981	EL21	1981	03	07.64918	11	53	52.90	-01	19	39.7		413
1981	EL21	1981	03	11.60352	11	50	46.66	-00	58	01.3		413
1981	EL21	1981	03	11.64518	11	50	44.69	-00	57	48.1		413
1981	EL21	1981	03	16.69028	11	46	39.89	-00	28	59.6		413
1981	EL21	1981	03	29.52805	11	36	25.56	+00	45	25.5		413
1981	EL21	1981	04	08.50490	11	29	28.16	+01	38	09.2		413

1981	EL21	1981	04	08.53962	11	29	27.02	+01	38	17.8		413
1981	EL21	1981	04	11.56596	11	27	38.14	+01	52	33.7		413
1981	EL21	1981	04	11.60069	11	27	37.04	+01	52	42.3		413
1981	EM21*	1981	03	02.57859	11	57	40.44	+02	51	22.3	18.0V	413
1981	EM21	1981	03	02.62373	11	57	38.47	+02	51	33.6		413
1981	EM21	1981	03	03.56736	11	56	59.33	+02	55	57.0		413
1981	EM21	1981	03	03.61076	11	56	57.39	+02	56	09.9		413
1981	EM21	1981	03	07.60751	11	54	03.55	+03	15	15.3		413
1981	EM21	1981	03	11.60352	11	51	01.43	+03	34	46.3		413
1981	EM21	1981	03	11.64518	11	50	59.59	+03	34	57.9		413
1981	EM21	1981	03	16.69028	11	47	03.55	+03	59	35.5		413
1981	EM21	1981	03	16.73195	11	47	01.69	+03	59	46.4		413
1981	EM21	1981	03	29.52805	11	37	24.27	+04	56	40.0		413
1981	EM21	1981	03	29.56451	11	37	22.89	+04	56	46.8		413
1981	EM21	1981	04	07.51456	11	31	42.91	+05	27	14.7		413
1981	EM21	1981	04	07.54928	11	31	41.83	+05	27	19.6		413
1981	EM21	1981	04	08.50490	11	31	10.33	+05	29	59.6		413
1981	EM21	1981	04	08.53962	11	31	09.31	+05	30	04.8		413
1981	EM21	1981	04	11.56596	11	29	36.65	+05	37	34.8		413
1981	EM21	1981	04	11.60069	11	29	35.78	+05	37	38.9		413
1981	EN21*	1981	03	02.57859	11	57	43.35	-00	27	01.7	18.5V	413
1981	EN21	1981	03	03.56736	11	57	03.06	-00	22	10.1		413
1981	EN21	1981	03	03.61076	11	57	01.24	-00	21	57.7		413
1981	EN21	1981	03	07.60751	11	54	10.70	-00	01	21.6		413
1981	EN21	1981	03	07.64918	11	54	08.99	-00	01	09.8		413
1981	EN21	1981	03	11.60352	11	51	11.70	+00	20	15.4		413
1981	EN21	1981	03	11.64518	11	51	09.85	+00	20	28.5		413
1981	EN21	1981	03	16.69028	11	47	16.44	+00	48	44.0		413
1981	EN21	1981	03	29.52805	11	37	31.84	+02	00	08.1		413
1981	EO21*	1981	03	02.57859	11	57	58.72	-01	25	38.8	20.0V	413
1981	EO21	1981	03	02.62373	11	57	56.36	-01	25	23.7		413
1981	EO21	1981	03	03.61076	11	57	05.02	-01	20	31.5		413
1981	EO21	1981	03	07.64918	11	53	27.22	-00	59	37.2		413
1981	EO21	1981	03	11.60352	11	49	45.89	-00	37	60.0		413
1981	EO21	1981	03	11.64518	11	49	43.65	-00	37	45.7		413
1981	EO21	1981	03	29.52805	11	33	10.23	+01	02	52.1		413
1981	EP21*	1981	03	02.57859	11	58	14.73	+02	28	32.5	19.0V	413
1981	EP21	1981	03	03.56736	11	57	19.94	+02	29	04.7		413
1981	EP21	1981	03	07.60751	11	53	22.94	+02	31	54.1		413
1981	EP21	1981	03	07.64918	11	53	20.47	+02	31	56.1		413
1981	EP21	1981	03	11.60352	11	49	12.98	+02	35	18.6		413
1981	EP21	1981	03	11.64518	11	49	10.42	+02	35	20.5		413
1981	EP21	1981	03	16.69028	11	43	39.47	+02	39	55.8		413
1981	EP21	1981	03	29.52805	11	29	32.09	+02	48	42.3		413
1981	EP21	1981	04	08.50490	11	19	53.52	+02	47	25.0		413
1981	EP21	1981	04	11.56596	11	17	22.40	+02	44	50.5		413
1981	EP21	1981	04	11.60069	11	17	20.94	+02	44	49.0		413
1981	EQ21*	1981	03	02.57859	11	58	14.84	-01	35	46.2	19.0V	413
1981	EQ21	1981	03	02.62373	11	58	13.29	-01	35	37.9		413
1981	EQ21	1981	03	03.56736	11	57	34.95	-01	31	57.3		413
1981	EQ21	1981	03	07.60751	11	54	48.24	-01	15	51.1		413
1981	EQ21	1981	03	07.64918	11	54	46.31	-01	15	39.2		413
1981	EQ21	1981	03	11.60352	11	51	57.66	-00	59	02.7		413
1981	EQ21	1981	03	11.64518	11	51	55.53	-00	58	51.5		413
1981	EQ21	1981	03	29.52805	11	39	04.77	+00	19	20.5		413
1981	EQ21	1981	03	29.56451	11	39	02.97	+00	19	31.4		413
1981	ER21*	1981	03	02.62373	11	58	17.83	+02	49	43.0	18.5V	413
1981	ER21	1981	03	03.56736	11	57	43.05	+02	54	49.1		413
1981	ER21	1981	03	03.61076	11	57	41.60	+02	55	02.5		413

1981	ER21	1981	03	07.60751	11	55	09.77	+03	16	56.9		413
1981	ER21	1981	03	07.64918	11	55	07.99	+03	17	10.0		413
1981	ER21	1981	03	11.60352	11	52	31.44	+03	39	15.1		413
1981	ER21	1981	03	11.64518	11	52	29.78	+03	39	28.1		413
1981	ER21	1981	03	16.73195	11	49	03.14	+04	07	56.1		413
1981	ER21	1981	03	29.52805	11	40	30.50	+05	16	07.8		413
1981	ER21	1981	03	29.56451	11	40	29.23	+05	16	17.6		413
1981	ER21	1981	04	08.50490	11	34	34.09	+06	01	43.0		413
1981	ER21	1981	04	08.53962	11	34	33.00	+06	01	50.1		413
1981	ES21*	1981	03	02.57859	11	58	25.96	+01	01	56.3	17.5V	413
1981	ES21	1981	03	02.62373	11	58	23.44	+01	01	57.5		413
1981	ES21	1981	03	03.56736	11	57	29.31	+01	02	20.3		413
1981	ES21	1981	03	03.61076	11	57	26.98	+01	02	21.6		413
1981	ES21	1981	03	07.60751	11	53	29.54	+01	04	36.8		413
1981	ES21	1981	03	07.64918	11	53	27.10	+01	04	38.2		413
1981	ES21	1981	03	11.60352	11	49	23.49	+01	07	35.2		413
1981	ES21	1981	03	11.64518	11	49	21.01	+01	07	36.6		413
1981	ES21	1981	03	16.69028	11	44	04.86	+01	11	57.0		413
1981	ES21	1981	03	16.73195	11	44	02.38	+01	11	59.1		413
1981	ES21	1981	03	29.52805	11	31	14.55	+01	21	54.8		413
1981	ES21	1981	03	29.56451	11	31	12.63	+01	21	56.0		413
1981	ET21*	1981	03	02.57859	11	58	34.53	+00	58	10.2	19.0V	413
1981	ET21	1981	03	03.56736	11	57	51.25	+01	05	46.3		413
1981	ET21	1981	03	07.60751	11	54	45.87	+01	37	39.2		413
1981	ET21	1981	03	11.60352	11	51	33.19	+02	10	00.4		413
1981	ET21	1981	03	11.64518	11	51	31.07	+02	10	19.9		413
1981	ET21	1981	03	16.69028	11	47	21.63	+02	51	21.7		413
1981	ET21	1981	03	29.52805	11	37	17.83	+04	28	46.0		413
1981	ET21	1981	04	08.50490	11	31	04.49	+05	29	20.0		413
1981	ET21	1981	04	08.53962	11	31	03.44	+05	29	29.1		413
1981	EU21*	1981	03	02.57859	11	58	38.98	+01	32	21.6	18.5V	413
1981	EU21	1981	03	02.62373	11	58	37.11	+01	32	36.3		413
1981	EU21	1981	03	03.56736	11	57	51.88	+01	38	33.6		413
1981	EU21	1981	03	07.60751	11	54	32.20	+02	04	31.0		413
1981	EU21	1981	03	07.64918	11	54	30.25	+02	04	45.2		413
1981	EU21	1981	03	11.60352	11	51	05.86	+02	30	56.7		413
1981	EU21	1981	03	11.64518	11	51	03.79	+02	31	11.4		413
1981	EU21	1981	03	16.69028	11	46	36.25	+03	04	58.1		413
1981	EU21	1981	03	16.73195	11	46	34.02	+03	05	14.6		413
1981	EU21	1981	03	29.52805	11	35	28.31	+04	27	18.9		413
1981	EU21	1981	03	29.56451	11	35	26.41	+04	27	33.5		413
1981	EU21	1981	04	07.51456	11	28	36.99	+05	16	42.3		413
1981	EU21	1981	04	07.54928	11	28	35.78	+05	16	51.4		413
1981	EU21	1981	04	08.50490	11	27	56.43	+05	21	33.2		413
1981	EU21	1981	04	11.56596	11	25	57.47	+05	35	36.9		413
1981	EU21	1981	04	11.60069	11	25	56.38	+05	35	44.8		413
1981	EV21*	1981	03	02.57859	11	59	02.25	+00	31	59.2	19.0V	413
1981	EV21	1981	03	07.60751	11	54	57.39	+00	42	06.6		413
1981	EV21	1981	03	11.60352	11	51	34.09	+00	50	56.1		413
1981	EV21	1981	03	16.69028	11	47	08.68	+01	02	46.3		413
1981	EV21	1981	03	29.56451	11	36	14.62	+01	31	47.1		413
1981	EV21	1981	04	08.50490	11	28	55.21	+01	49	11.5		413
1981	EV21	1981	04	08.53962	11	28	53.58	+01	49	14.3		413
1981	EV21	1981	04	11.56596	11	26	59.11	+01	53	02.2		413
1981	EV21	1981	04	11.60069	11	26	57.45	+01	53	06.0		413
1981	EW21*	1981	03	02.57859	11	59	14.35	-01	21	02.5	16.5V	413
1981	EW21	1981	03	02.62373	11	59	12.57	-01	20	52.2		413
1981	EW21	1981	03	03.56736	11	58	32.83	-01	16	25.1		413
1981	EW21	1981	03	03.61076	11	58	31.04	-01	16	13.8		413

1981	EW21	1981	03	07.60751	11	55	32.86	-00	56	15.1	413
1981	EW21	1981	03	07.64918	11	55	30.91	-00	56	02.8	413
1981	EW21	1981	03	11.60352	11	52	22.16	-00	34	36.1	413
1981	EW21	1981	03	11.64518	11	52	20.12	-00	34	22.8	413
1981	EW21	1981	03	16.69028	11	48	07.90	-00	05	24.2	413
1981	EW21	1981	03	16.73195	11	48	05.70	-00	05	08.8	413
1981	EW21	1981	03	29.56451	11	37	28.38	+01	10	06.9	413
1981	EW21	1981	04	07.51456	11	31	06.54	+01	57	02.1	413
1981	EW21	1981	04	07.54928	11	31	05.19	+01	57	11.6	413
1981	EW21	1981	04	08.50490	11	30	29.82	+02	01	40.7	413
1981	EW21	1981	04	08.53962	11	30	28.65	+02	01	49.2	413
1981	EW21	1981	04	11.56596	11	28	44.58	+02	15	08.8	413
1981	EW21	1981	04	11.60069	11	28	43.44	+02	15	17.9	413
1981	EX21*	1981	03	02.57859	11	59	19.37	-00	30	00.3	18.5V 413
1981	EX21	1981	03	02.62373	11	59	17.83	-00	29	43.6	413
1981	EX21	1981	03	03.56736	11	58	38.51	-00	22	32.3	413
1981	EX21	1981	03	03.61076	11	58	36.85	-00	22	14.4	413
1981	EX21	1981	03	07.60751	11	55	45.03	+00	08	51.7	413
1981	EX21	1981	03	07.64918	11	55	43.30	+00	09	10.4	413
1981	EX21	1981	03	11.60352	11	52	45.87	+00	40	54.7	413
1981	EX21	1981	03	11.64518	11	52	44.02	+00	41	14.2	413
1981	EX21	1981	03	16.69028	11	48	51.30	+01	22	31.9	413
1981	EX21	1981	03	29.52805	11	39	06.86	+03	06	12.3	413
1981	EX21	1981	03	29.56451	11	39	05.40	+03	06	26.7	413
1981	EX21	1981	04	08.50490	11	32	26.52	+04	18	54.2	413
1981	EX21	1981	04	08.53962	11	32	25.50	+04	19	05.0	413
1981	EX21	1981	04	11.56596	11	30	40.06	+04	38	55.3	413
1981	EX21	1981	04	11.60069	11	30	38.96	+04	39	07.7	413
1981	EY21*	1981	03	02.57859	11	59	23.55	-01	24	14.6	17.0V 413
1981	EY21	1981	03	02.62373	11	59	21.98	-01	23	56.1	413
1981	EY21	1981	03	03.56736	11	58	45.99	-01	16	36.4	413
1981	EY21	1981	03	03.61076	11	58	44.40	-01	16	17.7	413
1981	EY21	1981	03	07.60751	11	56	06.41	-00	44	32.0	413
1981	EY21	1981	03	07.64918	11	56	04.70	-00	44	12.7	413
1981	EY21	1981	03	11.60352	11	53	21.29	-00	11	45.2	413
1981	EY21	1981	03	11.64518	11	53	19.54	-00	11	25.0	413
1981	EY21	1981	03	16.69028	11	49	46.00	+00	30	40.4	413
1981	EY21	1981	03	16.73195	11	49	44.10	+00	31	02.1	413
1981	EY21	1981	03	29.52805	11	40	59.43	+02	15	20.8	413
1981	EY21	1981	03	29.56451	11	40	58.07	+02	15	37.3	413
1981	EY21	1981	04	07.51456	11	35	44.99	+03	20	44.3	413
1981	EY21	1981	04	08.50490	11	35	14.54	+03	27	23.5	413
1981	EY21	1981	04	08.53962	11	35	13.51	+03	27	35.7	413
1981	EY21	1981	04	11.56596	11	33	46.64	+03	46	53.3	413
1981	EY21	1981	04	11.60069	11	33	45.74	+03	47	05.2	413
1981	EZ21*	1981	03	02.57859	11	59	34.68	-01	13	50.5	18.5V 413
1981	EZ21	1981	03	02.62373	11	59	33.29	-01	13	41.5	413
1981	EZ21	1981	03	03.56736	11	58	54.00	-01	09	08.1	413
1981	EZ21	1981	03	03.61076	11	58	52.33	-01	08	56.8	413
1981	EZ21	1981	03	07.64918	11	55	58.02	-00	48	46.9	413
1981	EZ21	1981	03	11.64518	11	52	56.01	-00	27	32.1	413
1981	EZ21	1981	03	16.73195	11	48	55.81	+00	00	42.4	413
1981	EZ21	1981	03	29.52805	11	38	57.06	+01	12	27.6	413
1981	EZ21	1981	03	29.56451	11	38	55.48	+01	12	39.4	413
1981	EZ21	1981	04	08.50490	11	32	10.26	+02	02	43.0	413
1981	EZ21	1981	04	08.53962	11	32	08.96	+02	02	53.1	413
1981	EA22*	1981	03	02.62373	12	00	03.70	+01	08	22.9	18.0V 413
1981	EA22	1981	03	03.61076	11	59	26.23	+01	17	13.6	413
1981	EA22	1981	03	07.60751	11	56	45.75	+01	54	05.7	413

1981	EA22	1981	03	07.64918	11	56	43.96	+01	54	28.6	413
1981	EA22	1981	03	11.60352	11	53	55.94	+02	31	58.1	413
1981	EA22	1981	03	11.64518	11	53	54.08	+02	32	22.6	413
1981	EA22	1981	03	16.69028	11	50	11.27	+03	20	51.9	413
1981	EA22	1981	03	29.56451	11	40	47.83	+05	20	53.0	413
1981	EB22*	1981	03	02.57859	12	00	10.17	+03	13	36.2	18.0V 413
1981	EB22	1981	03	07.60751	11	56	47.74	+03	39	31.4	413
1981	EB22	1981	03	07.64918	11	56	46.08	+03	39	43.9	413
1981	EB22	1981	03	11.60352	11	53	56.40	+04	00	40.3	413
1981	EB22	1981	03	11.64518	11	53	54.71	+04	00	52.0	413
1981	EB22	1981	04	08.50490	11	34	37.86	+06	08	18.3	413
1981	EB22	1981	04	08.53962	11	34	36.78	+06	08	24.5	413
1981	EB22	1981	04	11.56596	11	33	02.86	+06	17	16.0	413
1981	EB22	1981	04	11.60069	11	33	01.65	+06	17	22.0	413
1981	EC22*	1981	03	02.57859	12	00	15.63	-00	10	31.7	19.0V 413
1981	EC22	1981	03	02.62373	12	00	13.17	-00	10	10.7	413
1981	EC22	1981	03	03.56736	11	59	27.66	-00	04	12.2	413
1981	EC22	1981	03	03.61076	11	59	25.31	-00	03	54.5	413
1981	EC22	1981	03	07.60751	11	55	59.49	+00	22	52.2	413
1981	EC22	1981	03	07.64918	11	55	57.52	+00	23	07.5	413
1981	EC22	1981	03	11.60352	11	52	19.58	+00	51	19.8	413
1981	EC22	1981	03	16.69028	11	47	26.24	+01	28	54.9	413
1981	EC22	1981	03	29.52805	11	35	25.52	+03	01	12.7	413
1981	ED22*	1981	03	02.57859	12	00	25.10	-00	08	52.8	19.0V 413
1981	ED22	1981	03	02.62373	12	00	23.31	-00	08	39.2	413
1981	ED22	1981	03	03.56736	11	59	43.68	-00	03	16.4	413
1981	ED22	1981	03	07.60751	11	56	44.16	+00	20	44.6	413
1981	ED22	1981	03	07.64918	11	56	42.28	+00	20	58.9	413
1981	ED22	1981	03	11.64518	11	53	32.85	+00	46	06.4	413
1981	ED22	1981	03	16.69028	11	49	24.04	+01	18	56.1	413
1981	ED22	1981	03	16.73195	11	49	21.52	+01	19	16.1	413
1981	ED22	1981	03	29.56451	11	38	53.00	+02	41	55.3	413
1981	ED22	1981	04	07.51456	11	32	34.80	+03	32	07.2	413
1981	ED22	1981	04	07.54928	11	32	33.65	+03	32	14.7	413
1981	ED22	1981	04	08.53962	11	31	57.01	+03	37	11.8	413
1981	ED22	1981	04	11.56596	11	30	12.90	+03	51	17.2	413
1981	EE22*	1981	03	02.57859	12	00	26.18	+02	51	33.0	18.5V 413
1981	EE22	1981	03	02.62373	12	00	24.53	+02	51	40.4	413
1981	EE22	1981	03	03.56736	11	59	44.33	+02	54	38.8	413
1981	EE22	1981	03	03.61076	11	59	42.69	+02	54	46.4	413
1981	EE22	1981	03	07.60751	11	56	45.68	+03	07	50.2	413
1981	EE22	1981	03	11.60352	11	53	38.96	+03	21	22.9	413
1981	EE22	1981	03	16.69028	11	49	33.19	+03	38	45.6	413
1981	EE22	1981	03	16.73195	11	49	31.25	+03	38	53.8	413
1981	EE22	1981	03	29.52805	11	39	19.88	+04	18	55.6	413
1981	EE22	1981	03	29.56451	11	39	18.19	+04	19	01.7	413
1981	EE22	1981	04	07.51456	11	33	04.05	+04	39	35.9	413
1981	EE22	1981	04	08.50490	11	32	27.11	+04	41	23.0	413
1981	EE22	1981	04	08.53962	11	32	25.79	+04	41	26.0	413
1981	EE22	1981	04	11.56596	11	30	40.12	+04	46	02.0	413
1981	EE22	1981	04	11.60069	11	30	39.01	+04	46	05.2	413
1981	EF22*	1981	03	02.62373	12	00	27.76	-02	11	50.1	18.5V 413
1981	EF22	1981	03	03.61076	11	59	45.17	-02	05	28.7	413
1981	EF22	1981	03	07.60751	11	56	40.54	-01	37	58.2	413
1981	EF22	1981	03	07.64918	11	56	38.61	-01	37	42.4	413
1981	EF22	1981	03	11.60352	11	53	23.01	-01	08	30.5	413
1981	EF22	1981	03	16.69028	11	49	01.97	-00	29	16.6	413
1981	EF22	1981	03	29.52805	11	38	35.07	+01	08	27.1	413
1981	EF22	1981	03	29.56451	11	38	33.59	+01	08	42.8	413

1981	EG22*	1981	03	02.57859	12	00	30.76	-00	59	09.7	18.0V	413
1981	EG22	1981	03	02.62373	12	00	28.36	-00	59	18.0		413
1981	EG22	1981	03	03.61076	11	59	35.32	-01	01	12.9		413
1981	EG22	1981	03	07.60751	11	55	45.66	-01	08	08.8		413
1981	EG22	1981	03	07.64918	11	55	43.29	-01	08	12.8		413
1981	EG22	1981	03	11.64518	11	51	35.67	-01	13	46.4		413
1981	EG22	1981	03	16.69028	11	46	06.31	-01	19	18.8		413
1981	EG22	1981	03	16.73195	11	46	03.50	-01	19	19.6		413
1981	EG22	1981	04	05.49137	11	25	29.05	-01	36	22.6		413
1981	EG22	1981	04	06.46361	11	24	38.80	-01	37	28.3		413
1981	EG22	1981	04	06.49834	11	24	37.02	-01	37	31.1		413
1981	EG22	1981	04	12.62048	11	19	58.99	-01	46	02.6		413
1981	EG22	1981	04	12.65521	11	19	57.78	-01	46	06.3		413
1981	EH22*	1981	03	02.57859	12	00	48.19	-02	00	22.9	18.5V	413
1981	EH22	1981	03	02.62373	12	00	46.31	-02	00	10.2		413
1981	EH22	1981	03	03.56736	12	00	06.23	-01	55	27.1		413
1981	EH22	1981	03	03.61076	12	00	03.94	-01	55	11.0		413
1981	EH22	1981	03	07.60751	11	57	04.70	-01	33	56.9		413
1981	EH22	1981	03	11.60352	11	53	53.56	-01	11	00.1		413
1981	EH22	1981	03	11.64518	11	53	51.38	-01	10	45.3		413
1981	EH22	1981	03	16.69028	11	49	38.91	-00	40	07.7		413
1981	EH22	1981	03	16.73195	11	49	36.54	-00	39	49.0		413
1981	EH22	1981	03	29.52805	11	38	57.21	+00	40	21.7		413
1981	EH22	1981	03	29.56451	11	38	55.59	+00	40	34.3		413
1981	EJ22*	1981	03	02.57859	12	00	53.18	-02	31	54.6	18.5V	413
1981	EJ22	1981	03	02.62373	12	00	51.25	-02	31	38.2		413
1981	EJ22	1981	03	03.56736	12	00	09.43	-02	25	24.0		413
1981	EJ22	1981	03	03.61076	12	00	07.48	-02	25	06.5		413
1981	EJ22	1981	03	07.60751	11	57	01.11	-01	57	20.3		413
1981	EJ22	1981	03	07.64918	11	56	58.90	-01	57	00.6		413
1981	EJ22	1981	03	11.60352	11	53	41.56	-01	27	30.7		413
1981	EJ22	1981	03	11.64518	11	53	39.39	-01	27	11.3		413
1981	EJ22	1981	03	16.69028	11	49	14.34	-00	47	18.5		413
1981	EJ22	1981	03	29.52805	11	37	50.74	+00	58	29.1		413
1981	EJ22	1981	03	29.56451	11	37	48.76	+00	58	47.5		413
1981	EJ22	1981	04	08.50490	11	29	57.09	+02	15	59.0		413
1981	EJ22	1981	04	08.53962	11	29	55.79	+02	16	11.5		413
1981	EJ22	1981	04	11.56596	11	27	52.32	+02	37	32.9		413
1981	EJ22	1981	04	11.60069	11	27	51.03	+02	37	46.1		413
1981	EK22*	1981	03	02.57859	12	01	09.88	-01	21	26.0	18.5V	413
1981	EK22	1981	03	02.62373	12	01	08.00	-01	21	15.0		413
1981	EK22	1981	03	03.56736	12	00	29.74	-01	17	17.5		413
1981	EK22	1981	03	03.61076	12	00	27.75	-01	17	05.3		413
1981	EK22	1981	03	07.60751	11	57	36.65	-00	59	17.5		413
1981	EK22	1981	03	07.64918	11	57	34.92	-00	59	06.6		413
1981	EK22	1981	03	11.60352	11	54	35.81	-00	40	13.6		413
1981	EK22	1981	03	11.64518	11	54	33.89	-00	40	02.8		413
1981	EK22	1981	03	16.73195	11	50	35.07	-00	14	34.4		413
1981	EK22	1981	03	29.52805	11	40	40.44	+00	50	15.3		413
1981	EK22	1981	04	08.50490	11	33	58.76	+01	35	18.9		413
1981	EK22	1981	04	11.60069	11	32	13.27	+01	47	24.3		413
1981	EL22*	1981	03	02.57859	12	01	11.12	-00	07	19.1	20.0V	413
1981	EL22	1981	03	03.56736	12	00	22.22	-00	06	25.3		413
1981	EL22	1981	03	07.60751	11	56	48.90	-00	01	31.1		413
1981	EL22	1981	03	07.64918	11	56	46.74	-00	01	27.2		413
1981	EL22	1981	03	11.60352	11	53	02.10	+00	04	50.5		413
1981	EL22	1981	03	16.69028	11	48	00.21	+00	14	16.2		413
1981	EL22	1981	03	16.73195	11	47	57.68	+00	14	22.6		413
1981	EL22	1981	04	11.56596	11	26	11.02	+00	51	52.4		413

1981	EL22	1981	04	11.60069	11	26	10.13	+00	51	52.8		413
1981	EM22*	1981	03	02.62373	12	01	16.89	-01	16	17.6	19.5V	413
1981	EM22	1981	03	07.60751	11	56	53.80	-00	55	46.7		413
1981	EM22	1981	03	11.60352	11	53	08.25	-00	37	27.4		413
1981	EM22	1981	03	11.64518	11	53	05.66	-00	37	15.3		413
1981	EM22	1981	03	29.52805	11	36	14.77	+00	49	33.6		413
1981	EN22*	1981	03	02.57859	12	01	50.07	-01	55	06.4	19.5V	413
1981	EN22	1981	03	02.62373	12	01	48.01	-01	55	01.0		413
1981	EN22	1981	03	03.56736	12	01	02.53	-01	52	36.1		413
1981	EN22	1981	03	03.61076	12	01	00.45	-01	52	30.2		413
1981	EN22	1981	03	07.60751	11	57	37.61	-01	41	03.9		413
1981	EN22	1981	03	11.60352	11	54	02.05	-01	28	05.1		413
1981	EN22	1981	03	11.64518	11	53	59.82	-01	27	56.8		413
1981	EN22	1981	03	16.69028	11	49	16.55	-01	09	55.4		413
1981	EN22	1981	03	16.73195	11	49	14.28	-01	09	44.7		413
1981	EN22	1981	03	29.52805	11	37	26.23	-00	21	30.3		413
1981	EN22	1981	04	05.45665	11	31	48.44	+00	02	15.4		413
1981	EN22	1981	04	06.49834	11	31	02.50	+00	05	29.7		413
1981	EN22	1981	04	07.46608	11	30	20.94	+00	08	25.1		413
1981	EN22	1981	04	07.50080	11	30	19.70	+00	08	29.5		413
1981	EN22	1981	04	12.62048	11	27	01.67	+00	22	17.9		413
1981	EN22	1981	04	12.65521	11	27	00.40	+00	22	22.4		413
1981	EO22*	1981	03	02.57859	12	01	55.58	-01	47	23.5	19.5V	413
1981	EO22	1981	03	03.56736	12	01	12.56	-01	43	14.1		413
1981	EO22	1981	03	07.60751	11	58	05.21	-01	24	48.6		413
1981	EO22	1981	03	11.64518	11	54	41.82	-01	04	20.5		413
1981	EO22	1981	03	16.69028	11	50	13.01	-00	36	41.2		413
1981	EO22	1981	03	29.52805	11	38	47.56	+00	36	40.8		413
1981	EO22	1981	03	29.56451	11	38	45.72	+00	36	53.2		413
1981	EP22*	1981	03	02.57859	12	02	02.38	+02	04	35.3	17.5V	413
1981	EP22	1981	03	03.56736	12	01	17.94	+02	08	29.0		413
1981	EP22	1981	03	03.61076	12	01	16.17	+02	08	38.3		413
1981	EP22	1981	03	07.60751	11	58	03.47	+02	25	20.9		413
1981	EP22	1981	03	07.64918	11	58	01.34	+02	25	31.5		413
1981	EP22	1981	03	11.60352	11	54	34.45	+02	43	10.1		413
1981	EP22	1981	03	11.64518	11	54	32.17	+02	43	21.0		413
1981	EP22	1981	03	16.69028	11	49	52.61	+03	06	36.4		413
1981	EP22	1981	03	29.52805	11	37	58.90	+04	02	04.3		413
1981	EP22	1981	04	07.51456	11	30	52.90	+04	30	33.2		413
1981	EP22	1981	04	07.54928	11	30	51.47	+04	30	38.6		413
1981	EP22	1981	04	08.50490	11	30	12.64	+04	32	55.3		413
1981	EP22	1981	04	08.53962	11	30	11.30	+04	32	59.7		413
1981	EP22	1981	04	11.60069	11	28	17.06	+04	39	09.5		413
1981	EQ22*	1981	03	02.62373	12	02	15.72	-02	31	19.9	18.5V	413
1981	EQ22	1981	03	03.56736	12	01	30.46	-02	26	09.2		413
1981	EQ22	1981	03	03.61076	12	01	28.72	-02	25	55.8		413
1981	EQ22	1981	03	07.60751	11	58	06.34	-02	02	31.2		413
1981	EQ22	1981	03	07.64918	11	58	04.02	-02	02	15.9		413
1981	EQ22	1981	03	11.60352	11	54	30.19	-01	37	04.0		413
1981	EQ22	1981	03	11.64518	11	54	27.82	-01	36	47.7		413
1981	EQ22	1981	03	16.69028	11	49	42.09	-01	02	33.4		413
1981	EQ22	1981	03	16.73195	11	49	39.71	-01	02	16.5		413
1981	EQ22	1981	03	29.52805	11	37	42.43	+00	27	15.9		413
1981	EQ22	1981	04	08.53962	11	29	49.16	+01	30	05.6		413
1981	EQ22	1981	04	11.56596	11	27	52.53	+01	46	30.9		413
1981	EQ22	1981	04	11.60069	11	27	51.31	+01	46	40.9		413
1981	ER22*	1981	03	02.57859	12	02	16.82	+00	24	10.3	19.0V	413
1981	ER22	1981	03	02.62373	12	02	14.70	+00	24	22.3		413
1981	ER22	1981	03	03.61076	12	01	26.47	+00	29	48.6		413

1981	ER22	1981	03	07.64918	11	58	02.09	+00	52	31.7	413
1981	ER22	1981	03	11.60352	11	54	32.24	+01	15	45.4	413
1981	ER22	1981	03	11.64518	11	54	30.10	+01	15	58.9	413
1981	ER22	1981	03	16.69028	11	49	54.57	+01	46	17.0	413
1981	ER22	1981	03	29.56451	11	38	19.63	+03	01	47.0	413
1981	ER22	1981	04	08.50490	11	30	26.40	+03	52	12.8	413
1981	ES22*	1981	03	02.57859	12	02	31.07	+01	54	35.2	17.0V 413
1981	ES22	1981	03	02.62373	12	02	29.33	+01	54	47.2	413
1981	ES22	1981	03	03.56736	12	01	50.80	+01	58	51.2	413
1981	ES22	1981	03	03.61076	12	01	49.17	+01	59	02.8	413
1981	ES22	1981	03	07.60751	11	59	00.65	+02	16	43.0	413
1981	ES22	1981	03	07.64918	11	58	58.93	+02	16	53.8	413
1981	ES22	1981	03	11.60352	11	56	05.36	+02	34	51.1	413
1981	ES22	1981	03	11.64518	11	56	03.52	+02	35	03.0	413
1981	ES22	1981	03	16.69028	11	52	16.56	+02	58	06.9	413
1981	ES22	1981	03	16.73195	11	52	14.57	+02	58	19.8	413
1981	ES22	1981	03	29.52805	11	42	47.72	+03	53	54.2	413
1981	ES22	1981	03	29.56451	11	42	46.21	+03	54	03.0	413
1981	ES22	1981	04	07.51456	11	36	52.51	+04	26	46.1	413
1981	ES22	1981	04	07.54928	11	36	51.32	+04	26	53.2	413
1981	ES22	1981	04	08.50490	11	36	16.95	+04	29	57.6	413
1981	ES22	1981	04	08.53962	11	36	15.80	+04	30	04.0	413
1981	ET22*	1981	03	02.57859	12	02	41.22	+02	39	10.7	16.5V 413
1981	ET22	1981	03	02.62373	12	02	39.05	+02	39	21.9	413
1981	ET22	1981	03	03.56736	12	01	51.57	+02	43	35.3	413
1981	ET22	1981	03	03.61076	12	01	49.42	+02	43	47.0	413
1981	ET22	1981	03	07.60751	11	58	18.15	+03	02	17.2	413
1981	ET22	1981	03	07.64918	11	58	15.83	+03	02	28.5	413
1981	ET22	1981	03	11.60352	11	54	34.61	+03	21	23.7	413
1981	ET22	1981	03	11.64518	11	54	32.22	+03	21	35.5	413
1981	ET22	1981	03	16.69028	11	49	41.00	+03	45	42.3	413
1981	ET22	1981	03	16.73195	11	49	38.63	+03	45	53.8	413
1981	ET22	1981	03	29.52805	11	37	49.68	+04	39	56.6	413
1981	ET22	1981	03	29.56451	11	37	47.77	+04	40	05.0	413
1981	ET22	1981	04	07.51456	11	31	03.42	+05	05	52.0	413
1981	ET22	1981	04	07.54928	11	31	02.06	+05	05	56.5	413
1981	ET22	1981	04	08.50490	11	30	25.63	+05	07	57.6	413
1981	ET22	1981	04	08.53962	11	30	24.41	+05	08	00.5	413
1981	ET22	1981	04	11.56596	11	28	38.90	+05	13	12.9	413
1981	ET22	1981	04	11.60069	11	28	37.78	+05	13	16.1	413
1981	EU22*	1981	03	02.57859	12	02	46.69	-01	09	10.2	15.5V 413
1981	EU22	1981	03	02.62373	12	02	44.40	-01	09	00.5	413
1981	EU22	1981	03	03.56736	12	01	57.56	-01	05	27.1	413
1981	EU22	1981	03	03.61076	12	01	55.43	-01	05	17.4	413
1981	EU22	1981	03	07.60751	11	58	23.49	-00	48	50.6	413
1981	EU22	1981	03	07.64918	11	58	21.15	-00	48	40.3	413
1981	EU22	1981	03	11.60352	11	54	35.57	-00	30	32.2	413
1981	EU22	1981	03	11.64518	11	54	33.02	-00	30	20.1	413
1981	EU22	1981	03	16.69028	11	49	31.10	-00	05	27.3	413
1981	EU22	1981	03	16.73195	11	49	28.45	-00	05	13.4	413
1981	EU22	1981	03	29.52805	11	36	54.57	+00	58	57.0	413
1981	EU22	1981	03	29.56451	11	36	52.55	+00	59	07.1	413
1981	EU22	1981	04	07.51456	11	29	33.70	+01	36	53.2	413
1981	EU22	1981	04	07.54928	11	29	32.27	+01	37	00.7	413
1981	EU22	1981	04	08.50490	11	28	52.59	+01	40	25.0	413
1981	EU22	1981	04	08.53962	11	28	51.17	+01	40	31.7	413
1981	EU22	1981	04	11.56596	11	26	56.26	+01	50	18.4	413
1981	EU22	1981	04	11.60069	11	26	54.98	+01	50	24.9	413
1981	EV22*	1981	03	02.57859	12	03	11.60	+00	14	03.4	19.0V 413

1981	EV22	1981	03	07.60751	11	59	32.45	+00	42	20.4	413
1981	EV22	1981	03	07.64918	11	59	30.77	+00	42	33.4	413
1981	EV22	1981	03	11.60352	11	56	29.34	+01	05	42.4	413
1981	EV22	1981	03	11.64518	11	56	27.56	+01	05	55.9	413
1981	EV22	1981	03	29.52805	11	42	33.63	+02	50	38.4	413
1981	EV22	1981	03	29.56451	11	42	31.85	+02	50	52.0	413
1981	EV22	1981	04	11.56596	11	33	52.76	+03	55	13.9	413
1981	EW22*	1981	03	02.57859	12	03	38.64	-01	41	30.6	19.0V 413
1981	EW22	1981	03	02.62373	12	03	36.81	-01	41	17.3	413
1981	EW22	1981	03	03.56736	12	02	58.33	-01	36	01.1	413
1981	EW22	1981	03	07.64918	12	00	04.56	-01	12	18.7	413
1981	EW22	1981	03	11.60352	11	57	07.30	-00	48	07.7	413
1981	EW22	1981	03	11.64518	11	57	05.60	-00	47	54.4	413
1981	EW22	1981	03	29.52805	11	43	38.64	+01	03	39.5	413
1981	EW22	1981	03	29.56451	11	43	37.25	+01	03	52.2	413
1981	EX22*	1981	03	02.57859	12	04	20.10	+00	57	41.4	18.0V 413
1981	EX22	1981	03	03.56736	12	03	41.51	+01	01	59.7	413
1981	EX22	1981	03	03.61076	12	03	39.94	+01	02	11.4	413
1981	EX22	1981	03	07.60751	12	00	58.12	+01	20	06.9	413
1981	EX22	1981	03	07.64918	12	00	56.41	+01	20	17.6	413
1981	EX22	1981	03	11.60352	11	58	09.60	+01	38	35.6	413
1981	EX22	1981	03	11.64518	11	58	07.80	+01	38	47.5	413
1981	EX22	1981	03	16.69028	11	54	29.12	+02	02	30.5	413
1981	EX22	1981	03	16.73195	11	54	27.22	+02	02	43.8	413
1981	EX22	1981	04	05.55430	11	40	37.15	+03	30	00.8	413
1981	EX22	1981	04	05.58312	11	40	36.26	+03	30	06.1	413
1981	EY22*	1981	03	02.62373	12	05	09.16	-00	57	49.9	18.5V 413
1981	EY22	1981	03	03.61076	12	04	24.85	-00	50	60.0	413
1981	EY22	1981	03	07.60751	12	01	11.11	-00	21	37.4	413
1981	EY22	1981	03	07.64918	12	01	09.10	-00	21	20.0	413
1981	EY22	1981	03	11.60352	11	57	39.77	+00	09	59.9	413
1981	EY22	1981	03	11.64518	11	57	37.51	+00	10	19.3	413
1981	EY22	1981	03	16.69028	11	52	52.92	+00	52	28.9	413
1981	EY22	1981	03	16.73195	11	52	50.40	+00	52	51.4	413
1981	EY22	1981	03	29.52805	11	40	33.81	+02	41	45.7	413
1981	EY22	1981	04	07.51456	11	32	59.45	+03	50	06.3	413
1981	EY22	1981	04	07.54928	11	32	57.90	+03	50	19.0	413
1981	EY22	1981	04	11.56596	11	30	09.71	+04	16	28.1	413
1981	EY22	1981	04	11.60069	11	30	08.40	+04	16	40.8	413
1981	EZ22*	1981	03	02.62373	12	05	12.94	-00	27	08.8	19.0V 413
1981	EZ22	1981	03	03.56736	12	04	23.83	-00	22	46.9	413
1981	EZ22	1981	03	07.60751	12	00	42.59	-00	02	54.9	413
1981	EZ22	1981	03	07.64918	12	00	40.09	-00	02	41.5	413
1981	EZ22	1981	03	11.60352	11	56	49.44	+00	18	09.8	413
1981	EZ22	1981	03	29.52805	11	38	28.25	+01	58	15.4	413
1981	EZ22	1981	03	29.56451	11	38	25.99	+01	58	26.6	413
1981	EZ22	1981	04	11.56596	11	26	56.83	+02	59	41.3	413
1981	EZ22	1981	04	11.60069	11	26	55.32	+02	59	47.7	413
1981	EA23*	1981	03	02.62373	12	05	21.26	-01	02	39.9	18.5V 413
1981	EA23	1981	03	03.56736	12	04	35.12	-01	01	16.2	413
1981	EA23	1981	03	07.60751	12	01	08.85	-00	54	23.0	413
1981	EA23	1981	03	11.64518	11	57	29.98	-00	46	16.9	413
1981	EA23	1981	03	16.69028	11	52	44.92	-00	34	58.8	413
1981	EA23	1981	03	16.73195	11	52	42.55	-00	34	51.0	413
1981	EA23	1981	03	29.52805	11	40	39.08	-00	04	24.3	413
1981	EA23	1981	04	06.46361	11	33	55.49	+00	11	54.6	413
1981	EA23	1981	04	06.49834	11	33	53.96	+00	11	59.2	413
1981	EA23	1981	04	12.62048	11	29	28.73	+00	21	24.3	413
1981	EA23	1981	04	12.65521	11	29	27.34	+00	21	27.1	413

1981	EB23*	1981	03	02.57859	12	05	47.13	+01	33	04.7	18.5V	413
1981	EB23	1981	03	03.56736	12	04	59.99	+01	37	51.2		413
1981	EB23	1981	03	07.60751	12	01	37.84	+01	58	04.4		413
1981	EB23	1981	03	11.60352	11	58	07.93	+02	18	46.3		413
1981	EB23	1981	03	16.73195	11	53	28.82	+02	45	53.3		413
1981	EB23	1981	03	29.52805	11	41	53.02	+03	51	04.5		413
1981	EB23	1981	04	08.50490	11	33	46.10	+04	33	48.3		413
1981	EB23	1981	04	08.53962	11	33	44.72	+04	33	55.2		413
1981	EB23	1981	04	11.56596	11	31	35.47	+04	44	40.9		413
1981	EB23	1981	04	11.60069	11	31	33.72	+04	44	47.3		413
1981	EC23*	1981	03	03.56736	11	42	19.96	+00	34	42.1	18.5V	413
1981	EC23	1981	03	03.61076	11	42	18.35	+00	34	51.7		413
1981	EC23	1981	03	07.60751	11	39	28.86	+00	53	10.7		413
1981	EC23	1981	03	07.64918	11	39	27.17	+00	53	21.0		413
1981	EC23	1981	03	11.64518	11	36	32.44	+01	12	22.5		413
1981	EC23	1981	03	16.69028	11	32	48.46	+01	36	59.9		413
1981	EC23	1981	03	29.52805	11	23	42.00	+02	38	05.8		413
1981	EC23	1981	03	29.56451	11	23	40.62	+02	38	14.8		413
1981	EC23	1981	04	08.53962	11	17	42.57	+03	19	25.7		413
1981	EC23	1981	04	11.56596	11	16	11.40	+03	30	09.3		413
1981	EC23	1981	04	11.60069	11	16	10.55	+03	30	15.2		413
1981	ED23*	1981	03	03.61076	11	43	36.33	+01	04	22.1	19.5V	413
1981	ED23	1981	03	07.60751	11	40	20.74	+01	14	11.9		413
1981	ED23	1981	03	11.64518	11	36	57.75	+01	24	43.5		413
1981	ED23	1981	03	16.69028	11	32	41.91	+01	38	15.4		413
1981	ED23	1981	03	29.52805	11	22	20.52	+02	11	10.5		413
1981	ED23	1981	03	29.56451	11	22	18.83	+02	11	14.6		413
1981	EE23*	1981	03	03.61076	11	45	55.78	-01	56	04.8	19.5V	413
1981	EE23	1981	03	07.60751	11	42	38.11	-01	39	01.8		413
1981	EE23	1981	03	07.64918	11	42	36.11	-01	38	52.3		413
1981	EE23	1981	03	11.64518	11	39	10.17	-01	20	26.0		413
1981	EE23	1981	03	29.56451	11	23	42.83	+00	09	15.4		413
1981	EF23*	1981	03	03.56736	11	49	44.38	+00	21	16.3	17.0V	413
1981	EF23	1981	03	03.61076	11	49	42.09	+00	21	33.6		413
1981	EF23	1981	03	07.60751	11	46	03.66	+00	49	50.7		413
1981	EF23	1981	03	07.64918	11	46	01.31	+00	50	07.9		413
1981	EF23	1981	03	11.60352	11	42	16.96	+01	19	09.1		413
1981	EF23	1981	03	11.64518	11	42	14.56	+01	19	26.3		413
1981	EF23	1981	03	16.69028	11	37	24.27	+01	57	00.9		413
1981	EF23	1981	03	16.73195	11	37	22.03	+01	57	18.0		413
1981	EF23	1981	03	29.56451	11	25	49.03	+03	27	47.1		413
1981	EF23	1981	04	07.51456	11	19	21.11	+04	19	51.2		413
1981	EF23	1981	04	07.54928	11	19	19.83	+04	20	00.4		413
1981	EF23	1981	04	08.50490	11	18	45.04	+04	24	49.5		413
1981	EF23	1981	04	08.53962	11	18	43.82	+04	24	57.6		413
1981	EF23	1981	04	11.56596	11	17	02.92	+04	39	04.6		413
1981	EF23	1981	04	11.60069	11	17	01.92	+04	39	11.8		413
1981	EG23*	1981	03	03.56736	11	51	03.96	+01	15	01.3	18.0V	413
1981	EG23	1981	03	07.60751	11	48	09.31	+01	32	44.9		413
1981	EG23	1981	03	07.64918	11	48	07.46	+01	32	55.4		413
1981	EG23	1981	03	11.60352	11	45	10.41	+01	50	53.6		413
1981	EG23	1981	03	11.64518	11	45	08.55	+01	51	04.3		413
1981	EG23	1981	03	16.73195	11	41	17.20	+02	14	28.3		413
1981	EG23	1981	03	29.56451	11	31	58.57	+03	10	28.1		413
1981	EG23	1981	04	07.51456	11	26	29.67	+03	42	47.5		413
1981	EG23	1981	04	07.54928	11	26	28.59	+03	42	53.9		413
1981	EG23	1981	04	08.50490	11	25	57.90	+03	45	54.4		413
1981	EG23	1981	04	08.53962	11	25	56.90	+03	45	58.7		413
1981	EG23	1981	04	11.56596	11	24	25.97	+03	54	43.6		413

1981	EG23	1981	04	11.60069	11	24	25.21	+03	54	48.5		413
1981	EH23*	1981	03	03.56736	11	51	09.69	-00	56	14.0	17.5V	413
1981	EH23	1981	03	03.61076	11	51	07.72	-00	56	04.1		413
1981	EH23	1981	03	07.60751	11	47	36.27	-00	34	25.3		413
1981	EH23	1981	03	07.64918	11	47	34.05	-00	34	12.7		413
1981	EH23	1981	03	11.60352	11	43	56.53	-00	11	33.3		413
1981	EH23	1981	03	16.69028	11	39	12.48	+00	18	31.4		413
1981	EH23	1981	03	29.52805	11	27	53.43	+01	32	57.2		413
1981	EH23	1981	04	08.50490	11	20	49.35	+02	21	40.7		413
1981	EH23	1981	04	08.53962	11	20	48.28	+02	21	48.0		413
1981	EH23	1981	04	11.56596	11	19	05.99	+02	34	03.0		413
1981	EH23	1981	04	11.60069	11	19	04.92	+02	34	09.1		413
1981	EJ23*	1981	03	03.56736	11	51	34.41	+00	19	39.8	17.5V	413
1981	EJ23	1981	03	03.61076	11	51	31.97	+00	19	51.9		413
1981	EJ23	1981	03	07.60751	11	48	12.95	+00	34	29.5		413
1981	EJ23	1981	03	07.64918	11	48	10.90	+00	34	38.1		413
1981	EJ23	1981	03	11.60352	11	44	45.84	+00	50	02.3		413
1981	EJ23	1981	03	11.64518	11	44	43.70	+00	50	12.2		413
1981	EJ23	1981	03	16.73195	11	40	14.77	+01	10	42.4		413
1981	EJ23	1981	03	29.56451	11	29	22.72	+02	00	53.6		413
1981	EJ23	1981	04	08.50490	11	22	21.98	+02	32	36.4		413
1981	EJ23	1981	04	08.53962	11	22	20.83	+02	32	40.7		413
1981	EK23*	1981	03	03.56736	11	52	08.92	-00	16	49.3	18.0V	413
1981	EK23	1981	03	03.61076	11	52	06.86	-00	16	32.9		413
1981	EK23	1981	03	07.60751	11	48	43.26	+00	09	25.1		413
1981	EK23	1981	03	11.64518	11	45	07.38	+00	36	58.4		413
1981	EK23	1981	03	16.69028	11	40	28.88	+01	12	42.3		413
1981	EK23	1981	03	16.73195	11	40	26.85	+01	12	57.6		413
1981	EK23	1981	03	29.52805	11	28	52.51	+02	43	08.5		413
1981	EK23	1981	03	29.56451	11	28	50.65	+02	43	24.8		413
1981	EL23*	1981	03	03.61076	11	52	55.17	+02	06	19.5	19.0V	413
1981	EL23	1981	03	07.60751	11	49	39.35	+02	34	20.1		413
1981	EL23	1981	03	07.64918	11	49	37.52	+02	34	34.2		413
1981	EL23	1981	03	11.60352	11	46	15.73	+03	02	54.9		413
1981	EL23	1981	03	11.64518	11	46	13.52	+03	03	12.5		413
1981	EL23	1981	03	16.73195	11	41	48.87	+03	39	42.3		413
1981	EL23	1981	03	29.56451	11	31	13.08	+05	05	11.6		413
1981	EL23	1981	04	08.50490	11	24	33.09	+05	57	55.3		413
1981	EM23*	1981	03	03.56736	11	53	48.99	+03	21	46.3	19.5V	413
1981	EM23	1981	03	07.60751	11	50	44.42	+03	33	40.7		413
1981	EM23	1981	03	07.64918	11	50	42.33	+03	33	47.4		413
1981	EM23	1981	03	11.64518	11	47	34.05	+03	45	47.2		413
1981	EM23	1981	03	16.69028	11	43	32.83	+04	00	50.0		413
1981	EM23	1981	03	29.52805	11	33	38.50	+04	35	28.5		413
1981	EM23	1981	03	29.56451	11	33	36.96	+04	35	33.7		413
1981	EN23*	1981	03	03.61076	11	54	06.78	+00	05	53.7	19.5V	413
1981	EN23	1981	03	07.60751	11	50	47.02	+00	21	28.4		413
1981	EN23	1981	03	07.64918	11	50	45.14	+00	21	35.4		413
1981	EN23	1981	03	16.69028	11	42	21.31	+01	02	19.9		413
1981	EN23	1981	03	16.73195	11	42	18.83	+01	02	31.4		413
1981	EN23	1981	03	29.52805	11	30	16.73	+02	02	15.7		413
1981	EO23*	1981	03	03.56736	11	54	53.58	-01	14	39.5	19.0V	413
1981	EO23	1981	03	07.64918	11	51	05.15	-00	50	25.9		413
1981	EO23	1981	03	11.60352	11	47	13.49	-00	25	27.6		413
1981	EO23	1981	03	29.56451	11	29	53.14	+01	31	13.4		413
1981	EP23*	1981	03	03.56736	11	56	56.95	+01	21	51.1	19.0V	413
1981	EP23	1981	03	03.61076	11	56	54.92	+01	21	50.0		413
1981	EP23	1981	03	07.60751	11	53	22.00	+01	20	15.7		413
1981	EP23	1981	03	07.64918	11	53	19.45	+01	20	15.3		413

1981 EP23	1981 03	11.60352	11 49	38.12	+01 19	16.4	413
1981 EP23	1981 03	16.73195	11 44	42.06	+01 18	27.0	413
1981 EP23	1981 03	29.52805	11 32	30.94	+01 15	34.8	413
1981 EP23	1981 03	29.56451	11 32	28.92	+01 15	33.5	413
1981 EQ23*	1981 03	03.56736	12 01	32.06	+00 07	41.0	18.0V 413
1981 EQ23	1981 03	07.60751	11 58	58.27	+00 32	21.6	413
1981 EQ23	1981 03	07.64918	11 58	56.73	+00 32	36.0	413
1981 EQ23	1981 03	11.60352	11 56	16.97	+00 57	49.7	413
1981 EQ23	1981 03	11.64518	11 56	15.40	+00 58	04.0	413
1981 EQ23	1981 03	16.73195	11 52	41.30	+01 31	27.7	413
1981 EQ23	1981 04	05.58312	11 39	07.59	+03 37	19.0	413
1981 ER23*	1981 03	03.56736	12 02	30.98	+02 45	40.1	20.0V 413
1981 ER23	1981 03	07.60751	11 59	16.38	+03 08	43.3	413
1981 ER23	1981 03	11.60352	11 55	52.88	+03 32	07.9	413
1981 ER23	1981 03	11.64518	11 55	50.63	+03 32	22.0	413
1981 ER23	1981 03	29.56451	11 40	23.18	+05 11	17.7	413
1981 ES23*	1981 03	03.56736	12 03	06.32	+00 29	09.7	20.0V 413
1981 ES23	1981 03	03.61076	12 03	04.25	+00 29	25.0	413
1981 ES23	1981 03	07.60751	11 59	56.08	+00 52	17.4	413
1981 ES23	1981 03	07.64918	11 59	54.10	+00 52	31.2	413
1981 ES23	1981 03	11.60352	11 56	38.02	+01 16	07.3	413
1981 ES23	1981 03	11.64518	11 56	36.26	+01 16	19.0	413
1981 ES23	1981 03	29.52805	11 41	28.26	+03 03	14.0	413
1981 ES23	1981 03	29.56451	11 41	26.62	+03 03	25.6	413
1981 ES23	1981 04	11.56596	11 32	14.63	+04 06	43.0	413
1981 ET23*	1981 03	03.56736	12 03	27.93	+01 53	47.1	19.0V 413
1981 ET23	1981 03	07.64918	11 59	33.42	+02 11	22.7	413
1981 ET23	1981 03	11.60352	11 55	35.31	+02 29	08.1	413
1981 ET23	1981 03	11.64518	11 55	32.36	+02 29	20.7	413
1981 ET23	1981 03	16.73195	11 50	17.18	+02 52	30.3	413
1981 ET23	1981 04	08.50490	11 28	17.48	+04 21	08.8	413
1981 ET23	1981 04	08.53962	11 28	15.92	+04 21	12.6	413
1981 ET23	1981 04	11.56596	11 25	55.82	+04 29	03.4	413
1981 ET23	1981 04	11.60069	11 25	54.22	+04 29	08.8	413
1981 EU23*	1981 03	03.56736	12 05	15.45	+01 38	45.9	16.5V 413
1981 EU23	1981 03	03.61076	12 05	13.33	+01 39	02.6	413
1981 EU23	1981 03	07.60751	12 01	45.33	+02 03	49.8	413
1981 EU23	1981 03	07.64918	12 01	43.11	+02 04	05.3	413
1981 EU23	1981 03	11.60352	11 58	05.79	+02 29	25.3	413
1981 EU23	1981 03	11.64518	11 58	03.43	+02 29	41.4	413
1981 EU23	1981 03	16.69028	11 53	17.10	+03 02	16.9	413
1981 EU23	1981 03	16.73195	11 53	14.64	+03 02	34.2	413
1981 EU23	1981 03	29.56451	11 41	26.49	+04 19	36.1	413
1981 EU23	1981 04	07.51456	11 34	29.09	+05 02	02.3	413
1981 EU23	1981 04	07.54928	11 34	27.70	+05 02	10.8	413
1981 EU23	1981 04	08.53962	11 33	47.68	+05 06	06.2	413
1981 EU23	1981 04	11.56596	11 31	53.92	+05 16	58.9	413
1981 EU23	1981 04	11.60069	11 31	52.69	+05 17	06.0	413
1981 EV23*	1981 03	03.56736	12 05	27.44	+00 30	43.9	18.0V 413
1981 EV23	1981 03	03.61076	12 05	25.21	+00 30	49.8	413
1981 EV23	1981 03	07.60751	12 01	49.23	+00 40	03.4	413
1981 EV23	1981 03	07.64918	12 01	47.01	+00 40	09.8	413
1981 EV23	1981 03	11.60352	11 58	01.73	+00 50	14.4	413
1981 EV23	1981 03	11.64518	11 57	59.35	+00 50	21.8	413
1981 EV23	1981 03	16.69028	11 53	03.06	+01 03	56.4	413
1981 EV23	1981 03	29.52805	11 40	46.89	+01 37	09.1	413
1981 EV23	1981 03	29.56451	11 40	44.70	+01 37	15.0	413
1981 EV23	1981 04	07.51456	11 33	26.28	+01 54	21.3	413
1981 EV23	1981 04	08.50490	11 32	43.79	+01 55	46.1	413

1981	EV23	1981	04	08.53962	11	32	42.48	+01	55	48.6		413
1981	EV23	1981	04	11.56596	11	30	40.91	+01	59	27.3		413
1981	EV23	1981	04	11.60069	11	30	39.71	+01	59	29.2		413
1981	EW23*	1981	03	07.60751	11	41	54.01	-00	48	53.8	19.5V	413
1981	EW23	1981	03	07.64918	11	41	51.77	-00	48	42.8		413
1981	EW23	1981	03	11.64518	11	38	07.74	-00	27	30.9		413
1981	EW23	1981	03	16.69028	11	33	15.06	+00	01	08.8		413
1981	EW23	1981	03	29.56451	11	21	10.38	+01	16	07.2		413
1981	EX23*	1981	03	07.60751	11	45	04.54	-02	08	04.2	19.0V	413
1981	EX23	1981	03	07.64918	11	45	02.71	-02	07	53.3		413
1981	EX23	1981	03	11.60352	11	41	53.27	-01	48	03.7		413
1981	EX23	1981	03	11.64518	11	41	51.24	-01	47	51.3		413
1981	EX23	1981	03	16.69028	11	37	43.65	-01	21	06.8		413
1981	EX23	1981	03	16.73195	11	37	41.73	-01	20	54.1		413
1981	EX23	1981	03	29.52805	11	27	31.54	-00	10	53.1		413
1981	EY23*	1981	03	07.64918	11	47	31.77	+02	00	14.1	19.5V	413
1981	EY23	1981	03	11.60352	11	44	35.79	+02	39	06.7		413
1981	EY23	1981	03	11.64518	11	44	34.03	+02	39	30.9		413
1981	EY23	1981	03	16.73195	11	40	39.20	+03	30	32.0		413
1981	EY23	1981	03	29.52805	11	30	57.65	+05	36	22.7		413
1981	EY23	1981	03	29.56451	11	30	56.14	+05	36	41.8		413
1981	EZ23*	1981	03	07.60751	11	49	35.78	-01	57	33.0	19.5V	413
1981	EZ23	1981	03	07.64918	11	49	33.87	-01	57	20.4		413
1981	EZ23	1981	03	11.60352	11	46	23.46	-01	33	29.8		413
1981	EZ23	1981	03	16.69028	11	42	10.44	-01	01	10.1		413
1981	EZ23	1981	03	29.52805	11	31	48.61	+00	22	30.9		413
1981	EA24*	1981	03	07.60751	11	50	16.81	+01	40	26.4	19.5V	413
1981	EA24	1981	03	07.64918	11	50	14.87	+01	40	32.3		413
1981	EA24	1981	03	11.60352	11	46	48.98	+01	51	18.9		413
1981	EA24	1981	03	16.69028	11	42	15.29	+02	05	44.1		413
1981	EA24	1981	03	29.56451	11	30	48.44	+02	40	49.1		413
1981	EB24*	1981	03	07.60751	11	51	17.79	+03	23	47.8	18.5V	413
1981	EB24	1981	03	07.64918	11	51	15.79	+03	23	57.0		413
1981	EB24	1981	03	11.60352	11	47	56.40	+03	39	47.4		413
1981	EB24	1981	03	16.69028	11	43	34.28	+04	00	06.5		413
1981	EB24	1981	03	16.73195	11	43	32.19	+04	00	16.2		413
1981	EB24	1981	03	29.52805	11	32	54.50	+04	46	37.0		413
1981	EB24	1981	03	29.56451	11	32	52.82	+04	46	43.3		413
1981	EB24	1981	04	07.51456	11	26	31.51	+05	10	49.6		413
1981	EB24	1981	04	08.50490	11	25	54.35	+05	12	57.9		413
1981	EB24	1981	04	08.53962	11	25	53.11	+05	13	02.3		413
1981	EB24	1981	04	11.56596	11	24	06.63	+05	18	41.9		413
1981	EB24	1981	04	11.60069	11	24	05.81	+05	18	44.6		413
1981	EC24*	1981	03	07.64918	11	51	59.46	-00	20	05.0	19.0V	413
1981	EC24	1981	03	11.60352	11	49	36.03	-00	02	35.6		413
1981	EC24	1981	03	11.64518	11	49	34.27	-00	02	22.5		413
1981	EC24	1981	03	16.69028	11	46	26.50	+00	20	38.6		413
1981	EC24	1981	03	29.52805	11	38	32.32	+01	19	47.1		413
1981	EC24	1981	03	29.56451	11	38	31.17	+01	19	54.5		413
1981	ED24*	1981	03	07.60751	11	52	44.51	+02	34	03.0	18.0V	413
1981	ED24	1981	03	11.60352	11	49	57.00	+03	04	44.5		413
1981	ED24	1981	03	16.69028	11	46	17.46	+03	44	05.7		413
1981	ED24	1981	03	16.73195	11	46	15.81	+03	44	24.7		413
1981	ED24	1981	03	29.56451	11	37	13.60	+05	19	29.6		413
1981	ED24	1981	04	08.50490	11	31	13.03	+06	22	38.4		413
1981	ED24	1981	04	08.53962	11	31	11.78	+06	22	51.7		413
1981	ED24	1981	04	11.56596	11	29	39.46	+06	39	23.9		413
1981	ED24	1981	04	11.60069	11	29	38.26	+06	39	36.7		413
1981	EE24*	1981	03	07.60751	11	55	21.03	+03	46	56.2	19.0V	413

1981	EE24	1981	03	07.64918	11	55	18.95	+03	47	09.0		413
1981	EE24	1981	03	11.60352	11	52	18.96	+04	05	17.0		413
1981	EE24	1981	03	11.64518	11	52	16.95	+04	05	28.1		413
1981	EE24	1981	03	16.73195	11	48	19.58	+04	28	42.0		413
1981	EE24	1981	03	29.52805	11	38	34.53	+05	22	27.0		413
1981	EE24	1981	03	29.56451	11	38	33.17	+05	22	34.8		413
1981	EE24	1981	04	08.50490	11	31	58.21	+05	55	06.1		413
1981	EE24	1981	04	08.53962	11	31	57.00	+05	55	10.6		413
1981	EF24*	1981	03	07.64918	11	58	09.07	+03	54	46.0	18.5V	413
1981	EF24	1981	03	11.60352	11	55	14.97	+04	10	16.1		413
1981	EF24	1981	03	11.64518	11	55	13.10	+04	10	25.6		413
1981	EF24	1981	03	16.69028	11	51	23.21	+04	30	16.7		413
1981	EF24	1981	03	16.73195	11	51	21.36	+04	30	27.2		413
1981	EF24	1981	03	29.56451	11	41	34.97	+05	17	40.2		413
1981	EF24	1981	04	08.50490	11	34	41.98	+05	46	55.2		413
1981	EF24	1981	04	08.53962	11	34	40.73	+05	47	00.3		413
1981	EF24	1981	04	11.60069	11	32	47.37	+05	54	07.1		413
1981	EG24*	1981	03	07.60751	11	58	31.87	-01	53	53.8	19.0V	413
1981	EG24	1981	03	07.64918	11	58	30.02	-01	53	44.2		413
1981	EG24	1981	03	11.64518	11	55	19.26	-01	36	19.9		413
1981	EG24	1981	03	16.69028	11	51	06.65	-01	12	40.1		413
1981	EG24	1981	03	16.73195	11	51	04.54	-01	12	26.3		413
1981	EG24	1981	03	29.56451	11	40	16.45	-00	08	53.8		413
1981	EH24*	1981	03	07.60751	12	00	14.67	+02	00	15.3	19.5V	413
1981	EH24	1981	03	11.60352	11	57	08.85	+02	18	39.3		413
1981	EH24	1981	03	11.64518	11	57	06.30	+02	18	52.9		413
1981	EH24	1981	03	16.69028	11	53	03.88	+02	42	27.2		413
1981	EH24	1981	03	29.52805	11	42	51.70	+03	39	53.4		413
1981	EH24	1981	03	29.56451	11	42	49.70	+03	40	04.9		413
1981	EJ24*	1981	03	07.60751	12	01	57.36	+03	03	08.4	18.5V	413
1981	EJ24	1981	03	11.60352	11	58	13.60	+03	16	51.2		413
1981	EJ24	1981	03	11.64518	11	58	11.26	+03	16	58.6		413
1981	EJ24	1981	03	16.69028	11	53	14.78	+03	34	39.0		413
1981	EJ24	1981	03	16.73195	11	53	12.41	+03	34	48.5		413
1981	EJ24	1981	03	29.52805	11	40	33.62	+04	15	44.3		413
1981	EJ24	1981	03	29.56451	11	40	31.35	+04	15	51.4		413
1981	EK24*	1981	03	02.57859	11	48	57.99	+00	11	26.0	19.0V	413
1981	EK24	1981	03	03.56736	11	43	12.94	-00	08	09.2		413
1981	FP	1981	03	02.62373	11	56	41.13	-00	26	48.9	19.0V	413
1981	FP	1981	03	03.56736	11	56	01.93	-00	21	10.3		413
1981	FP	1981	03	07.60751	11	53	02.85	+00	04	24.0		413
1981	FP	1981	03	07.64918	11	53	00.87	+00	04	40.1		413
1981	FP	1981	03	11.60352	11	49	51.99	+00	31	29.2		413
1981	FP	1981	03	11.64518	11	49	49.80	+00	31	46.4		413
1981	FP	1981	03	16.69028	11	45	37.36	+01	07	31.7		413
1981	FP	1981	03	29.52805	11	35	07.73	+02	37	42.5		413
1981	FP	1981	03	29.56451	11	35	06.05	+02	37	56.5		413
1981	FP	1981	04	08.50490	11	28	32.30	+03	36	50.5		413
1981	FP	1981	04	08.53962	11	28	31.13	+03	37	02.2		413
1981	FP	1981	04	11.56596	11	26	58.96	+03	51	42.1		413
1981	FP	1981	04	11.60069	11	26	58.02	+03	51	50.1		413
1981	FQ	1981	03	02.57859	11	55	19.81	+00	49	53.5	16.5V	413
1981	FQ	1981	03	02.62373	11	55	18.01	+00	50	04.0		413
1981	FQ	1981	03	03.56736	11	54	40.39	+00	54	06.5		413
1981	FQ	1981	03	03.61076	11	54	38.71	+00	54	17.0		413
1981	FQ	1981	03	07.60751	11	51	51.67	+01	12	08.9		413
1981	FQ	1981	03	07.64918	11	51	49.86	+01	12	20.0		413
1981	FQ	1981	03	16.69028	11	45	02.93	+01	55	35.9		413
1981	FQ	1981	03	16.73195	11	45	01.05	+01	55	48.5		413

1981 FQ	1981 03	29.52805	11 35	22.15	+02 56	45.1	413
1981 FQ	1981 03	29.56451	11 35	20.57	+02 56	54.9	413
1981 FQ	1981 04	07.51456	11 29	26.31	+03 33	37.6	413
1981 FQ	1981 04	07.54928	11 29	25.10	+03 33	45.4	413
1981 FQ	1981 04	08.53962	11 28	50.37	+03 37	19.4	413
1981 FQ	1981 04	11.56596	11 27	10.50	+03 47	31.5	413
1981 FR	1981 03	02.57859	11 56	42.35	-01 23	21.2	18.0V 413
1981 FR	1981 03	02.62373	11 56	40.48	-01 22	59.8	413
1981 FR	1981 03	03.56736	11 56	02.86	-01 14	47.7	413
1981 FR	1981 03	03.61076	11 56	01.05	-01 14	26.1	413
1981 FR	1981 03	07.60751	11 53	13.04	-00 38	28.7	413
1981 FR	1981 03	07.64918	11 53	11.30	-00 38	07.4	413
1981 FR	1981 03	11.60352	11 50	14.62	-00 00	46.0	413
1981 FR	1981 03	11.64518	11 50	12.78	-00 00	24.0	413
1981 FR	1981 03	16.69028	11 46	17.96	+00 48	55.2	413
1981 FR	1981 03	16.73195	11 46	16.06	+00 49	19.4	413
1981 FR	1981 03	29.52805	11 36	22.45	+02 55	29.1	413
1981 FR	1981 03	29.56451	11 36	20.90	+02 55	49.0	413
1981 FR	1981 04	07.51456	11 30	16.54	+04 17	21.1	413
1981 FR	1981 04	07.54928	11 30	15.37	+04 17	37.6	413
1981 FR	1981 04	08.50490	11 29	40.68	+04 25	46.5	413
1981 FR	1981 04	11.56596	11 27	56.98	+04 50	44.4	413
1981 FR	1981 04	11.60069	11 27	55.79	+04 50	59.7	413
1981 GN1	1981 03	02.57859	11 59	13.43	-01 17	02.5	16.0V 413
1981 GN1	1981 03	02.62373	11 59	11.47	-01 16	40.9	413
1981 GN1	1981 03	03.56736	11 58	29.86	-01 08	21.3	413
1981 GN1	1981 03	03.61076	11 58	27.96	-01 07	59.7	413
1981 GN1	1981 03	07.60751	11 55	22.03	-00 31	22.1	413
1981 GN1	1981 03	07.64918	11 55	20.01	-00 30	59.5	413
1981 GN1	1981 03	11.60352	11 52	04.25	+00 07	05.3	413
1981 GN1	1981 03	11.64518	11 52	02.03	+00 07	29.7	413
1981 GN1	1981 03	16.69028	11 47	41.42	+00 57	46.6	413
1981 GN1	1981 03	16.73195	11 47	39.14	+00 58	12.7	413
1981 GN1	1981 03	29.52805	11 36	40.74	+03 06	11.4	413
1981 GN1	1981 03	29.56451	11 36	38.93	+03 06	31.9	413
1981 GN1	1981 04	07.51456	11 29	56.79	+04 27	59.9	413
1981 GN1	1981 04	07.54928	11 29	55.50	+04 28	16.1	413
1981 GN1	1981 04	08.50490	11 29	17.54	+04 36	17.7	413
1981 GN1	1981 04	08.53962	11 29	16.26	+04 36	33.2	413
1981 GN1	1981 04	11.56596	11 27	23.84	+05 00	48.7	413
1981 GN1	1981 04	11.60069	11 27	22.71	+05 01	02.6	413
1981 GO1	1981 03	02.57859	11 59	52.47	+01 55	26.2	17.0V 413
1981 GO1	1981 03	02.62373	11 59	50.41	+01 55	35.4	413
1981 GO1	1981 03	03.56736	11 59	06.52	+01 58	55.3	413
1981 GO1	1981 03	03.61076	11 59	04.52	+01 59	04.7	413
1981 GO1	1981 03	07.60751	11 55	46.72	+02 14	06.8	413
1981 GO1	1981 03	07.64918	11 55	44.52	+02 14	16.4	413
1981 GO1	1981 03	11.60352	11 52	14.36	+02 30	08.8	413
1981 GO1	1981 03	11.64518	11 52	12.00	+02 30	18.9	413
1981 GO1	1981 03	16.69028	11 47	31.68	+02 51	07.1	413
1981 GO1	1981 03	16.73195	11 47	29.31	+02 51	17.3	413
1981 GO1	1981 03	29.52805	11 35	56.58	+03 39	30.2	413
1981 GO1	1981 03	29.56451	11 35	54.77	+03 39	36.8	413
1981 GO1	1981 04	07.51456	11 29	19.58	+04 02	45.2	413
1981 GO1	1981 04	07.54928	11 29	18.25	+04 02	49.5	413
1981 GO1	1981 04	08.50490	11 28	43.17	+04 04	33.6	413
1981 GO1	1981 04	08.53962	11 28	41.92	+04 04	36.5	413
1981 GO1	1981 04	11.56596	11 27	00.97	+04 09	01.1	413
1981 GO1	1981 04	11.60069	11 26	59.96	+04 09	03.7	413

OBSERVATIONS MADE AT GOTTINGEN BY W. LANDGRAF.

Object	Date	UT	R. A. (1950)			Decl.	Mag.	Obs.
2	1983 04	17.13789	19 14	23.99	+15 13	27.0	10.3	528
2	1983 04	17.13980	19 14	24.03	+15 13	28.7		528
2	1983 04	17.14119	19 14	24.07	+15 13	29.2		528
5	1983 04	16.92163	10 27	26.62	+14 35	18.3	10.5	528
5	1983 04	16.92591	10 27	26.68	+14 35	18.4		528
5	1983 04	16.92840	10 27	26.75	+14 35	18.0		528
5	1983 04	16.93049	10 27	26.76	+14 35	18.3		528
5	1983 04	16.93338	10 27	26.81	+14 35	18.8		528
115	1983 03	28.83808	08 24	20.91	+14 14	07.7		528
115	1983 03	28.84346	08 24	20.98	+14 14	05.9		528
115	1983 03	28.84607	08 24	21.04	+14 14	05.4		528
115	1983 03	28.89346	08 24	21.81	+14 13	56.5		528

OBSERVATIONS MADE AT FALKENSEE BY M. GRESSMANN.

Object	Date	UT	R. A. (1950)			Decl.	N	Obs.
165	1982 09	24.98990	01 32	41.22	+26 18	21.2		542
165	1982 09	25.00355	01 32	40.60	+26 18	22.7		542
165	1982 09	25.04089	01 32	38.92	+26 18	23.5		542
165	1982 09	27.98646	01 30	36.36	+26 16	56.1		542
165	1982 09	28.01109	01 30	35.38	+26 16	53.7		542
165	1982 09	28.04571	01 30	33.71	+26 16	52.8		542
283	1982 09	14.90182	22 33	34.72	-00 04	57.6		542
283	1982 09	14.92113	22 33	33.82	-00 05	00.7		542
283	1982 09	14.94297	22 33	32.85	-00 05	02.8	1	542
547	1982 07	23.93994	20 27	29.80	+07 00	05.9	1	542
547	1982 07	23.96138	20 27	28.70	+06 59	58.2	1	542
370	1982 09	24.96649	01 00	28.90	+21 53	07.1		542
370	1982 09	24.98082	01 00	27.91	+21 53	06.8		542
370	1982 09	25.01255	01 00	26.13	+21 53	03.0		542
370	1982 09	27.96958	00 57	47.93	+21 47	10.0		542
370	1982 09	27.99359	00 57	46.21	+21 47	09.1		542
370	1982 09	28.02804	00 57	44.43	+21 47	07.2		542
675	1982 09	24.98990	01 38	31.75	+25 59	44.8		542
675	1982 09	25.00355	01 38	31.42	+25 59	43.0		542
675	1982 09	25.04089	01 38	30.11	+25 59	40.9		542
675	1982 09	27.98646	01 36	55.88	+25 55	55.5		542
675	1982 09	28.01109	01 36	54.94	+25 55	51.3		542
675	1982 09	28.04571	01 36	53.72	+25 55	47.9		542
699	1982 07	23.90303	19 34	10.53	+11 25	47.3		542
699	1982 07	23.92340	19 34	09.74	+11 26	02.8		542
699	1982 07	23.94913	19 34	08.41	+11 26	21.3		542
706	1982 09	14.90182	22 28	11.28	-00 07	47.4		542
706	1982 09	14.92113	22 28	09.95	-00 07	43.4		542
706	1982 09	14.94297	22 28	08.80	-00 07	39.5		542
713	1982 07	23.00207	21 48	09.07	+02 19	41.8	1	542
713	1982 07	23.01130	21 48	08.98	+02 19	42.6	1	542
930	1982 09	24.98990	01 36	07.56	+27 15	40.4	2	542
930	1982 09	25.00355	01 36	06.67	+27 15	49.9	2	542
930	1982 09	25.04089	01 36	04.55	+27 16	00.9	2	542
930	1982 09	27.98646	01 33	07.66	+27 30	20.7		542
930	1982 09	28.01109	01 33	05.73	+27 30	24.7		542
930	1982 09	28.04571	01 33	03.95	+27 30	36.2		542
1129	1982 09	24.96649	01 06	01.09	+20 36	48.4		542
1129	1982 09	25.01255	01 05	59.12	+20 36	40.7		542
1132	1982 09	27.97783	01 02	56.31	+02 04	52.2		542
1132	1982 09	28.00253	01 02	55.31	+02 04	52.0		542
1132	1982 09	28.03667	01 02	53.03	+02 04	45.3		542

1136	1982 07 23.00207	21 44 27.10	+03 32 07.1	1 542
1136	1982 07 23.01130	21 44 27.01	+03 32 04.0	542
1264	1982 07 23.89584	19 14 45.38	+14 15 52.8	542
1264	1982 07 23.91649	19 14 44.47	+14 15 52.7	542
1264	1982 07 23.93164	19 14 43.93	+14 15 51.2	542
1467	1982 09 14.91300	22 52 28.27	+06 58 24.3	542
1467	1982 09 14.93424	22 52 26.97	+06 58 24.8	542
1467	1982 09 14.95122	22 52 26.03	+06 58 26.1	542
1687	1982 09 27.97783	01 05 53.53	+02 31 30.9	542
1687	1982 09 28.00253	01 05 52.36	+02 31 25.9	1 542
1687	1982 09 28.03667	01 05 51.20	+02 31 12.6	542

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

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

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1975 XY1	1982 09 11.37681	23 41 10.85	+36 11 49.5			1	675
1975 XY1	1982 09 12.35397	23 40 14.81	+36 09 40.2			1	675
1978 QJ	1982 09 28.46120	03 45 46.22	+31 36 49.4			1	675
1978 QJ	1982 09 29.46051	03 45 39.07	+31 38 06.4			1	675
1982 SV	1982 12 05.17711	00 03 35.78	-14 03 08.4			1	675
1982 SV	1982 12 06.19186	00 05 02.65	-14 05 25.8			1	675
1982 XK *	1982 12 05.17711	00 03 36.49	-14 04 19.1		17	1	675
1983 GC *	1983 04 04.29375	12 38 36.32	-08 55 04.3		17	2	675
1983 GC	1983 04 04.32153	12 38 35.16	-08 54 32.5			2	675
1983 GC	1983 04 04.33542	12 38 34.55	-08 54 15.9			2	675
1983 GC	1983 04 07.31458	12 36 23.26	-07 51 07.2			2	675
1983 GC	1983 04 07.35278	12 36 21.77	-07 50 23.1			2	675
1983 GJ *	1983 04 04.29375	12 40 22.36	-09 03 06.0		16	2	675
1983 GJ	1983 04 04.33542	12 40 21.57	-09 02 59.3			2	675
1983 GJ	1983 04 07.31458	12 39 00.64	-08 52 24.1			2	675
1983 GJ	1983 04 07.35278	12 38 59.87	-08 52 17.1			2	675
2011 P-L *	1960 09 24.45000	00 53 20.22	+07 11 03.4		16.9	3	675
2011 P-L	1960 09 26.37010	00 51 58.96	+06 57 57.8			3	675
2011 P-L	1960 09 28.45140	00 50 29.03	+06 43 28.7			3	675
2011 P-L	1960 09 29.44510	00 49 45.69	+06 36 27.7			3	675
2011 P-L	1960 10 17.30420	00 36 52.22	+04 29 16.1			3	675
2011 P-L	1960 10 22.26809	00 33 41.28	+03 56 19.2			3	675
2011 P-L	1960 10 22.27920	00 33 40.88	+03 56 16.9			3	675
2011 P-L	1960 10 25.30351	00 31 54.45	+03 37 21.6			3	675
2011 P-L	1960 10 25.37570	00 31 52.00	+03 36 55.7			3	675
2011 P-L	1960 10 26.35766	00 31 19.22	+03 31 01.1			3	675
4006 P-L *	1960 09 25.42780	00 15 28.39	+06 06 55.4		16.5	3	675
4006 P-L	1960 09 26.27573	00 14 53.77	+06 01 10.0			3	675
4006 P-L	1960 09 26.30558	00 14 52.53	+06 00 58.5			3	675
4006 P-L	1960 09 28.32780	00 13 29.46	+05 47 09.3			3	675
4006 P-L	1960 09 28.36808	00 13 27.73	+05 46 52.4			3	675
4006 P-L	1960 10 17.27085	00 01 35.95	+03 38 42.6			3	675
4006 P-L	1960 10 22.22293	23 59 08.12	+03 08 15.4			3	675
4006 P-L	1960 10 24.35836	23 58 11.25	+02 55 51.9			3	675
4006 P-L	1960 10 26.32573	23 57 23.25	+02 44 51.5			3	675
4583 P-L *	1960 09 24.41183	00 19 21.54	+01 37 48.6		17.0	3	675
4583 P-L	1960 09 26.31530	00 17 53.30	+01 27 41.8			3	675
4583 P-L	1960 09 27.40836	00 17 02.24	+01 21 52.6			3	675
4583 P-L	1960 09 28.39725	00 16 16.18	+01 16 36.0			3	675
4583 P-L	1960 10 17.28198	00 02 36.35	-00 16 48.7			3	675
4583 P-L	1960 10 22.23406	23 59 41.39	-00 36 39.9			3	675
4583 P-L	1960 10 25.25350	23 58 07.02	-00 47 22.4			3	675
4583 P-L	1960 10 26.31531	23 57 36.19	-00 50 52.2			3	675
4805 P-L *	1960 09 24.38750	00 28 32.91	+01 59 06.6		19.6	3	675

4805	P-L	1960	09	24.41183	00	28	31.45	+01	58	57.9	3	675		
4805	P-L	1960	09	26.31530	00	26	43.94	+01	48	58.2	3	675		
4805	P-L	1960	09	26.33542	00	26	42.77	+01	48	52.4	3	675		
4805	P-L	1960	09	27.37500	00	25	43.69	+01	43	24.1	3	675		
4805	P-L	1960	09	27.40836	00	25	41.93	+01	43	15.0	3	675		
4805	P-L	1960	09	28.37778	00	24	46.75	+01	38	07.7	3	675		
4805	P-L	1960	09	28.39725	00	24	45.61	+01	38	01.8	3	675		
6073	P-L	*	1960	09	24.33613	23	59	53.40	+02	02	32.9	18.8	3	675
6073	P-L		1960	09	25.32502	23	59	02.58	+01	58	26.4	3	675	
6073	P-L		1960	09	26.27573	23	58	13.99	+01	54	28.3	3	675	
6073	P-L		1960	09	28.32780	23	56	29.41	+01	45	54.6	3	675	
6073	P-L		1960	10	17.21390	23	42	34.11	+00	35	29.1	3	675	
6073	P-L		1960	10	22.15559	23	39	55.60	+00	21	58.7	3	675	
6073	P-L		1960	10	24.18787	23	38	59.79	+00	17	14.4	3	675	
6073	P-L		1960	10	26.26113	23	38	08.63	+00	12	55.8	3	675	
6560	P-L	*	1960	09	24.35002	23	57	44.98	-05	25	07.3	17.6	3	675
6560	P-L		1960	09	26.28543	23	55	54.64	-05	37	31.3	3	675	
6560	P-L		1960	09	27.34237	23	54	54.53	-05	44	07.6	3	675	
6560	P-L		1960	09	28.33822	23	53	58.42	-05	50	14.6	3	675	
6560	P-L		1960	10	17.22501	23	38	42.72	-07	18	59.4	3	675	
6560	P-L		1960	10	22.16324	23	35	55.49	-07	31	31.0	3	675	
6560	P-L		1960	10	24.23753	23	34	56.62	-07	35	18.2	3	675	
6560	P-L		1960	10	26.27157	23	34	05.79	-07	38	08.6	3	675	
6562	P-L	*	1960	09	24.35002	23	59	23.76	-03	22	32.7	17.6	3	675
6562	P-L		1960	09	26.28543	23	57	58.11	-03	31	12.6	3	675	
6562	P-L		1960	09	27.34237	23	57	11.50	-03	35	54.2	3	675	
6562	P-L		1960	09	28.33822	23	56	27.67	-03	40	16.0	3	675	
6562	P-L		1960	10	17.22501	23	43	55.89	-04	50	01.7	3	675	
6562	P-L		1960	10	22.16324	23	41	21.20	-05	02	33.8	3	675	
6562	P-L		1960	10	24.23753	23	40	23.36	-05	06	56.7	3	675	
6562	P-L		1960	10	26.27157	23	39	30.88	-05	10	42.3	3	675	
6611	P-L	*	1960	09	24.35002	23	49	17.39	-00	45	16.6	17.2	3	675
6611	P-L		1960	09	26.28543	23	47	40.04	-00	59	19.5	3	675	
6611	P-L		1960	10	17.22501	23	33	02.98	-03	11	40.5	3	675	
6611	P-L		1960	10	22.16324	23	31	00.51	-03	33	05.0	3	675	
6611	P-L		1960	10	24.23753	23	30	21.77	-03	40	33.8	3	675	
6611	P-L		1960	10	26.27157	23	29	51.44	-03	47	00.1	3	675	

Note 1: observer J. Gibson. 2: observers E. Helin and R. S. Dunbar;
 measured by S. Swanson. 3: observer T. Gehrels; scanned and measured by
 C. J. van Houten and I. van Houten-Groeneveld.

OBSERVATIONS MADE WITH THE 0.46-M SCHMIDT TELESCOPE AT PALOMAR BY C.

SHOEMAKER, B. BEHYMER, K. HERKENHOFF, R. KIRK, M. MARLEY, G. OJAKANGAS,
 C. POLANSKEY AND D. RUDY.

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.	
561	1983	01	10.27361	07 37 58.71	+19 46 00.7	16	675
561	1983	01	10.30208	07 37 56.84	+19 46 04.6		675
561	1983	01	11.27291	07 37 06.46	+19 48 26.8		675
561	1983	01	11.30000	07 37 04.88	+19 48 26.7		675
561	1983	01	12.27152	07 36 14.23	+19 50 48.1		675
561	1983	01	12.29861	07 36 12.60	+19 50 49.9		675
2548	1983	01	10.27361	07 32 53.10	+26 27 35.5	17	675
2548	1983	01	10.30208	07 32 49.85	+26 27 22.6		675
2548	1983	01	11.27291	07 31 41.57	+26 24 03.8		675
2548	1983	01	12.27152	07 30 29.85	+26 20 30.1		675
2548	1983	01	12.29861	07 30 27.80	+26 20 24.5		675
2862	1983	01	10.40000	07 36 29.04	+15 13 02.7	16.5	675
2862	1983	01	10.42986	07 36 27.10	+15 13 04.0		675
2862	1983	01	11.33715	07 35 27.07	+15 14 06.6		675

2862		1983	01	12.32847	07	34	21.14	+15	15	14.1			675	
2862		1983	01	12.35486	07	34	19.48	+15	15	17.1			675	
1983	AA	1983	01	10.39375	08	03	54.94	+22	10	12.3			675	
1983	AA	1983	01	10.42291	08	03	51.96	+22	09	36.9			675	
1983	AA	1983	01	11.33055	08	02	22.42	+21	50	48.4			675	
1983	AJ	1983	01	10.30208	07	28	39.79	+25	45	41.2			675	
1983	AJ	1983	01	11.30000	07	26	59.35	+25	33	47.9			675	
1983	AJ	1983	01	12.27152	07	25	22.72	+25	22	10.7			675	
1983	AJ	1983	01	12.29861	07	25	19.90	+25	21	52.2			675	
1983	AH1	1983	01	10.39375	08	25	28.07	+23	33	45.0			675	
1983	AH1	1983	01	10.42291	08	25	26.68	+23	34	12.5			675	
1983	AH1	1983	01	11.33055	08	24	43.69	+23	48	36.8			675	
1983	AH1	1983	02	10.41736	07	58	42.53	+30	48	00.2			675	
1983	AH1	1983	02	11.21180	07	58	11.96	+30	56	01.5			675	
1983	AH1	1983	02	15.23194	07	55	53.17	+31	33	27.4			675	
1983	AD2	1983	01	12.41006	08	32	03.72	+10	57	37.8			675	
1983	AE2	1983	01	13.35625	08	21	31.34	+44	42	49.6			675	
1983	AE2	1983	01	14.27916	08	20	32.38	+44	52	06.3			675	
1983	AE2	1983	02	15.16041	07	47	12.21	+47	57	59.4			675	
1983	AE2	1983	02	15.31250	07	47	04.52	+47	58	14.1			675	
1983	AF2	1983	02	11.34305	09	06	33.44	+08	34	18.4			675	
1983	AF2	1983	02	15.23680	09	00	08.00	+07	57	20.3			675	
1983	AU2	*	1983	01	10.27361	07	21	43.09	+23	57	09.8	17	1	675
1983	AU2		1983	01	10.30208	07	21	41.09	+23	57	11.1			675
1983	AU2		1983	01	11.27291	07	20	31.40	+23	57	24.7			675
1983	AU2		1983	01	12.27152	07	19	20.00	+23	57	34.5			675
1983	AU2		1983	01	12.29861	07	19	18.12	+23	57	34.1			675
1983	AV2	*	1983	01	10.27361	07	22	14.75	+24	19	25.3	17.5	1	675
1983	AV2		1983	01	10.30208	07	22	12.19	+24	19	30.2			675
1983	AV2		1983	01	11.30000	07	21	01.68	+24	22	11.0			675
1983	AV2		1983	01	12.27152	07	19	52.00	+24	24	45.1			675
1983	AV2		1983	01	12.29861	07	19	49.60	+24	24	46.6			675
1983	AW2	*	1983	01	10.27361	07	30	38.53	+22	24	55.0	17.5	1	675
1983	AW2		1983	01	10.30208	07	30	36.10	+22	25	02.0			675
1983	AW2		1983	01	11.30000	07	29	36.37	+22	28	38.7			675
1983	AW2		1983	01	12.27152	07	28	37.89	+22	32	14.7			675
1983	BC		1983	01	11.27291	07	20	31.82	+22	17	49.3			675
1983	BC		1983	01	11.30000	07	20	30.09	+22	18	16.3			675
1983	BC		1983	01	12.27152	07	19	30.67	+22	33	16.0			675
1983	BC		1983	01	12.29861	07	19	28.91	+22	33	40.8			675
1983	BD		1983	01	10.27361	07	27	23.58	+19	45	33.5	17.5		675
1983	BD		1983	01	10.30208	07	27	21.94	+19	45	47.9			675
1983	BD		1983	01	12.27152	07	25	26.25	+20	00	19.4			675
1983	BD		1983	01	12.29861	07	25	24.43	+20	00	31.2			675
1983	BE		1983	01	10.27361	07	27	22.76	+19	58	47.6	16.5		675
1983	BE		1983	01	10.30208	07	27	21.19	+19	59	00.0			675
1983	BE		1983	01	11.27291	07	26	26.39	+20	05	10.6			675
1983	BE		1983	01	11.30000	07	26	24.96	+20	05	23.5			675
1983	BE		1983	01	12.27152	07	25	30.45	+20	11	40.0			675
1983	BE		1983	01	12.29861	07	25	28.73	+20	11	51.4			675
1983	BF		1983	01	10.30208	07	30	12.21	+21	06	32.9			675
1983	BF		1983	01	11.27291	07	29	21.71	+21	08	52.7			675
1983	BF		1983	01	11.30000	07	29	20.27	+21	08	55.1			675
1983	BF		1983	01	12.27152	07	28	29.54	+21	11	17.3			675
1983	EZ	*	1983	03	11.28680	12	10	38.64	+24	35	05.6	16	2	675
1983	EZ		1983	03	13.29375	12	09	11.51	+24	46	34.1			675
6548	P-L		1983	01	10.40000	08	02	24.02	+13	41	47.1	16		675
6548	P-L		1983	01	10.42986	08	02	22.26	+13	41	55.4			675
6548	P-L		1983	01	11.33715	08	01	33.54	+13	45	39.0			675

6548 P-L 1983 01 12.32847 08 00 39.71 +13 49 50.4 675
 6548 P-L 1983 01 12.35486 08 00 38.22 +13 49 57.9 675
 Note 1: discoverers R. Kirk and D. Rudy. 2: discoverer C. Shoemaker.

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY'S ANDERSON MESA STATION BY
 B. A. SKIFF. MEASURED BY E. BOWELL.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
5	1983 04	10.17986	10 26 29.51	+14 35 32.2			688
5	1983 04	10.23958	10 26 29.54	+14 35 35.5			688
15	1983 03	17.25000	11 50 51.73	-16 37 29.1			688
15	1983 03	17.29167	11 50 49.38	-16 37 19.7			688
18	1983 04	10.17986	10 25 23.89	+14 43 07.7			688
18	1983 04	10.23958	10 25 22.80	+14 43 19.3			688
25	1983 03	17.30764	13 12 04.91	-21 03 14.6			688
25	1983 03	17.33681	13 12 03.75	-21 03 00.7			688
59	1983 04	10.17986	10 08 46.54	+10 25 24.9			688
59	1983 04	10.23958	10 08 45.91	+10 25 37.3			688
79	1983 03	16.14375	07 47 46.47	+14 57 13.9			688
79	1983 03	16.20417	07 47 47.42	+14 57 22.4			688
104	1983 04	18.27604	13 56 52.84	-11 02 45.2			688
104	1983 04	18.30694	13 56 51.39	-11 02 38.7			688
110	1983 03	16.32153	12 48 13.63	+02 27 25.6			688
110	1983 03	16.35903	12 48 11.85	+02 27 35.9			688
117	1983 03	17.30764	13 21 09.69	-19 19 48.9			688
117	1983 03	17.33681	13 21 08.37	-19 19 52.3			688
186	1983 03	10.25556	11 29 46.09	+13 29 22.2			688
186	1983 03	10.28611	11 29 44.03	+13 29 27.6			688
188	1983 03	17.25000	11 59 38.35	-16 10 16.7			688
188	1983 03	17.29167	11 59 36.30	-16 10 02.8			688
196	1983 04	01.14097	10 04 31.60	+22 06 08.4			688
196	1983 04	01.20833	10 04 30.13	+22 06 06.3			688
201	1983 03	16.32153	12 39 48.46	-00 01 06.0			688
201	1983 03	16.35903	12 39 46.74	-00 00 51.3			688
250	1983 03	16.32153	12 45 57.96	+01 59 03.3			688
250	1983 03	16.35903	12 45 56.13	+01 59 08.1			688
346	1983 03	10.25556	11 38 29.62	+16 07 51.7			688
346	1983 03	10.28611	11 38 28.05	+16 08 02.7			688
369	1983 04	18.29167	14 32 55.43	+03 04 46.2			688
369	1983 04	18.32222	14 32 53.80	+03 04 52.7			688
377	1983 03	09.11458	06 56 02.17	+14 11 06.2			688
378	1983 04	10.22083	11 10 16.87	-03 20 41.7			688
378	1983 04	10.28403	11 10 15.07	-03 20 20.5			688
382	1983 03	17.30764	13 26 46.77	-19 52 45.3			688
382	1983 03	17.33681	13 26 45.78	-19 52 47.3			688
386	1983 03	16.32153	12 33 52.06	+05 10 28.4			688
386	1983 03	16.35903	12 33 50.50	+05 10 49.6			688
428	1983 03	16.32153	12 40 40.94	-01 59 35.3			688
428	1983 03	16.35903	12 40 38.66	-01 59 27.4			688
431	1983 03	16.32153	12 27 39.92	-00 28 48.4			688
431	1983 03	16.35903	12 27 38.35	-00 28 38.1			688
470	1983 04	18.22222	13 27 44.79	-01 48 01.2			688
470	1983 04	18.26042	13 27 42.75	-01 47 40.9			688
489	1983 03	09.10556	06 27 53.87	+11 08 55.2			688
556	1983 03	17.30764	13 08 05.68	-16 20 18.1			688
556	1983 03	17.33681	13 08 04.35	-16 20 14.2			688
589	1983 03	16.14375	07 51 31.49	+11 11 17.7			688
608	1983 03	17.30764	13 17 36.06	-21 51 32.2			688
608	1983 03	17.33681	13 17 34.91	-21 51 30.4			688
651	1983 03	10.25556	11 40 31.26	+14 53 42.8			688

651	1983	03	10.28611	11	40	29.65	+14	53	49.5	688
686	1983	03	17.25000	12	00	03.10	-21	28	57.1	688
686	1983	03	17.29167	12	00	00.94	-21	28	44.0	688
767	1983	04	18.27604	13	52	15.40	-08	41	23.3	688
767	1983	04	18.30694	13	52	13.90	-08	41	15.9	688
807	1983	03	10.25556	11	45	30.94	+13	11	20.0	688
807	1983	03	10.28611	11	45	29.60	+13	11	35.0	688
817	1983	04	01.14097	10	06	48.04	+21	52	09.5	688
817	1983	04	01.20833	10	06	46.80	+21	52	15.3	688
838	1983	04	10.22083	11	17	35.56	-08	56	38.9	688
838	1983	04	10.28403	11	17	33.53	-08	56	13.6	688
871	1983	04	10.17986	10	27	04.53	+11	58	12.8	688
871	1983	04	10.23958	10	27	03.94	+11	58	21.6	688
883	1983	04	10.22083	11	22	19.18	-03	49	54.2	688
883	1983	04	10.28403	11	22	16.28	-03	49	32.0	688
915	1983	04	18.27604	13	52	25.40	-15	02	42.8	688
915	1983	04	18.30694	13	52	23.27	-15	02	37.7	688
967	1983	04	18.22222	13	35	49.04	-01	16	35.3	688
967	1983	04	18.26042	13	35	46.58	-01	16	24.6	688
974	1983	04	18.22222	13	33	49.93	-01	44	05.4	688
974	1983	04	18.26042	13	33	47.79	-01	43	55.9	688
1036	1983	03	10.19444	10	07	08.75	-18	38	21.2	688
1036	1983	03	10.22500	10	07	07.27	-18	38	08.2	688
1047	1983	03	16.32153	12	41	57.68	+04	53	53.7	688
1047	1983	03	16.35903	12	41	55.49	+04	54	08.3	688
1200	1983	04	18.27604	14	00	05.24	-11	33	11.5	688
1200	1983	04	18.30694	14	00	03.80	-11	33	00.9	688
1261	1983	04	01.14097	10	12	59.94	+14	49	46.9	688
1261	1983	04	01.20833	10	12	58.63	+14	49	50.1	688
1261	1983	04	10.17986	10	11	13.02	+14	48	48.7	688
1261	1983	04	10.23958	10	11	12.70	+14	48	45.9	688
1287	1983	04	10.22083	11	21	54.82	-01	41	49.3	688
1315	1983	03	17.30764	13	28	20.69	-16	03	28.8	688
1315	1983	03	17.33681	13	28	19.84	-16	03	23.7	688
1318	1983	04	10.22083	11	31	42.89	-08	24	19.4	688
1318	1983	04	10.28403	11	31	37.57	-08	25	02.9	688
1366	1983	04	01.14097	10	07	53.92	+21	05	56.0	688
1366	1983	04	01.20833	10	07	51.96	+21	05	50.8	688
1436	1983	03	17.25000	12	00	36.81	-21	05	14.6	688
1436	1983	03	17.29167	12	00	34.98	-21	05	05.1	688
1458	1983	04	18.29167	14	30	48.12	-03	03	50.2	688
1458	1983	04	18.32222	14	30	46.75	-03	03	31.0	688
1517	1983	04	18.22222	13	41	02.52	-04	58	06.3	688
1517	1983	04	18.26042	13	41	00.42	-04	57	58.8	688
1555	1983	04	10.17986	10	06	06.84	+08	05	38.4	688
1555	1983	04	10.23958	10	06	05.69	+08	05	44.7	688
1558	1983	03	10.25556	11	26	12.44	+17	06	35.1	688
1558	1983	03	10.28611	11	26	11.12	+17	06	45.7	688
1728	1983	04	10.22083	11	14	26.25	-05	21	39.5	688
1728	1983	04	10.28403	11	14	24.03	-05	21	14.9	688
1746	1983	04	10.22083	11	18	36.32	-01	59	19.2	688
1746	1983	04	10.28403	11	18	34.66	-01	59	09.1	688
1792	1983	04	18.22222	13	45	27.20	-00	59	41.5	688
1839	1983	04	18.22222	13	29	06.54	-01	53	54.4	688
1839	1983	04	18.26042	13	29	04.56	-01	53	49.8	688
1912	1983	04	18.27604	13	44	57.47	-07	06	47.8	688
1912	1983	04	18.30694	13	44	56.07	-07	06	37.9	688
2002	1983	04	10.17986	10	10	16.67	+09	14	28.1	688

2002	1983 04 10.23958	10 10 16.43	+09 14 46.0	688
2010	1983 04 18.27604	13 39 54.64	-11 29 02.0	688
2010	1983 04 18.30694	13 39 53.28	-11 28 55.0	688
2067	1983 04 10.17986	10 14 27.42	+11 50 02.1	688
2067	1983 04 10.23958	10 14 26.84	+11 50 05.7	688
2087	1983 04 10.17986	10 21 17.76	+13 13 22.0	688
2087	1983 04 10.23958	10 21 17.11	+13 13 23.1	688
2104	1983 03 10.19444	10 00 36.86	-17 13 49.8	688
2104	1983 03 10.22500	10 00 35.64	-17 13 41.6	688
2106	1983 04 18.22222	13 44 39.08	-00 21 11.8	688
2106	1983 04 18.26042	13 44 37.07	-00 20 58.1	688
2111	1983 04 10.17986	10 16 14.74	+10 18 00.5	688
2111	1983 04 10.23958	10 16 14.00	+10 18 13.4	688
2140	1983 03 16.14375	07 51 43.94	+15 18 25.8	688
2140	1983 03 16.20417	07 51 43.71	+15 18 29.1	688
2147	1983 04 01.14097	10 01 37.80	+15 49 01.3	688
2147	1983 04 01.20833	10 01 36.76	+15 49 16.9	688
2154	1983 01 07.12500	05 33 20.12	+36 16 20.4	688
2236	1983 04 01.14097	10 01 21.99	+19 09 53.5	688
2236	1983 04 01.20833	10 01 19.57	+19 09 46.9	688
2250	1983 04 18.27604	13 44 34.70	-09 04 29.1	688
2250	1983 04 18.30694	13 44 33.18	-09 04 20.9	688
2271	1983 04 10.17986	10 11 08.27	+13 34 53.3	688
2271	1983 04 10.23958	10 11 07.56	+13 34 57.4	688
2291	1983 04 10.17986	10 05 23.73	+08 57 48.7	688
2291	1983 04 10.23958	10 05 23.48	+08 58 18.1	688
2308	1983 04 18.22222	13 26 52.90	-04 10 13.5	688
2308	1983 04 18.26042	13 26 50.22	-04 10 17.3	688
2316	1983 03 16.32153	12 35 38.16	-02 00 13.1	688
2316	1983 03 16.35903	12 35 36.28	-02 00 01.2	688
2319	1983 04 18.22222	13 28 35.87	-04 37 21.2	688
2319	1983 04 18.26042	13 28 33.95	-04 37 10.1	688
2363	1983 03 17.25000	12 02 45.46	-20 20 30.7	688
2363	1983 03 17.29167	12 02 44.27	-20 20 18.1	688
2380	1983 04 10.17986	10 17 05.09	+09 08 41.0	688
2380	1983 04 10.23958	10 17 04.51	+09 08 41.5	688
2390	1983 04 10.22083	11 23 54.54	-06 18 39.2	688
2390	1983 04 10.28403	11 23 51.90	-06 18 25.8	688
2486	1983 01 07.12500	05 41 37.06	+38 39 34.1	688
2486	1983 01 07.18924	05 41 33.07	+38 39 20.4	688
2500	1983 03 16.32153	12 48 34.79	+05 12 59.8	688
2500	1983 03 16.35903	12 48 32.62	+05 13 08.9	688
2511	1983 03 10.25556	11 42 45.21	+16 57 24.9	688
2511	1983 03 10.28611	11 42 43.39	+16 57 37.0	688
2567	1983 04 18.29167	14 19 57.90	-00 36 22.9	688
2567	1983 04 18.32222	14 19 56.49	-00 36 12.5	688
2650	1983 03 17.30764	13 09 42.53	-22 10 37.4	688
2650	1983 03 17.33681	13 09 41.30	-22 10 38.6	688
2652	1983 04 18.22222	13 32 53.85	-02 09 24.1	688
2652	1983 04 18.26042	13 32 51.82	-02 09 16.6	688
2654	1983 04 18.27604	13 54 50.95	-11 09 31.7	688
2654	1983 04 18.30694	13 54 49.51	-11 09 20.9	688
2826	1983 04 18.27604	13 55 03.63	-09 53 04.6	688
2826	1983 04 18.30694	13 55 01.90	-09 53 05.4	688
2857	1983 04 01.14097	10 02 16.81	+14 40 42.7	688
2857	1983 04 01.20833	10 02 16.15	+14 40 57.9	688
2857	1983 04 10.17986	10 02 03.38	+14 58 47.3	688
2857	1983 04 10.23958	10 02 03.82	+14 58 51.5	688

2879		1983 04 18.29167	14 18 51.86	+02 53 28.5	15.8	688
2879		1983 04 18.32222	14 18 50.44	+02 53 41.2		688
1936 XA		1983 03 16.14375	07 56 40.31	+10 06 16.0	17.0	688
1936 XA		1983 03 16.20417	07 56 41.08	+10 06 25.7		688
1940 YF		1983 04 18.29167	14 25 13.57	-03 51 06.0	15.5	688
1940 YF		1983 04 18.32222	14 25 11.69	-03 51 06.8		688
1973 DP		1983 03 16.32153	12 41 25.78	+00 11 44.8	17.5	688
1973 DP		1983 03 16.35903	12 41 24.15	+00 11 52.7		688
1980 LE		1983 04 10.22083	11 15 43.43	-02 21 51.4	17.5	688
1980 LE		1983 04 10.28403	11 15 41.08	-02 21 34.8		1 688
1980 TB5		1983 03 17.30764	13 19 11.83	-18 22 06.5	16.2	688
1980 TB5		1983 03 17.33681	13 19 10.46	-18 22 16.1		688
1980 XM		1983 04 18.27604	13 47 47.68	-12 55 26.5	16.8	688
1980 XM		1983 04 18.30694	13 47 45.99	-12 55 23.6		688
1981 LA		1983 03 09.26528	11 30 11.09	+53 31 38.7	15.8	688
1981 LA		1983 03 09.29653	11 30 08.47	+53 31 53.2		688
1981 UL		1983 03 17.25000	11 52 14.50	-19 56 33.6	16.2	688
1981 UL		1983 03 17.29167	11 52 12.22	-19 56 19.9		688
1981 XF2		1983 03 16.32153	12 34 38.57	+02 49 43.0	17.0	688
1981 XF2		1983 03 16.35903	12 34 36.41	+02 49 57.0		688
1983 BH		1983 03 16.14375	07 52 59.58	+12 19 17.2	16.8	688
1983 BH		1983 03 16.20417	07 53 01.50	+12 19 13.1		688
1983 DG		1983 04 10.17986	10 28 14.98	+09 35 45.6	17.5	688
1983 DG		1983 04 10.23958	10 28 13.55	+09 35 36.9		688
1983 FB		1983 04 10.22083	11 22 08.71	-06 12 16.6	16.2	688
1983 FB		1983 04 10.28403	11 22 06.49	-06 11 49.6		688
1983 FC		1983 04 10.22083	11 21 27.26	-06 14 12.2	16.2	688
1983 FC		1983 04 10.28403	11 21 24.68	-06 14 06.7		688
1983 FD		1983 04 10.22083	11 21 51.75	-08 06 43.9	15.8	688
1983 FD		1983 04 10.28403	11 21 48.75	-08 06 25.0		688
1983 FE	*	1983 03 16.32153	12 28 57.21	-02 11 28.2	17.0	6 688
1983 FE		1983 03 16.35903	12 28 55.61	-02 11 12.5		688
1983 FF	*	1983 03 16.32153	12 46 30.45	+05 28 02.9	16.8	6 688
1983 FF		1983 03 16.35903	12 46 28.85	+05 28 28.1		688
1983 FG	*	1983 03 16.32153	12 47 53.68	+05 48 42.8	17.2	6 688
1983 FG		1983 03 16.35903	12 47 51.68	+05 48 56.6		688
1983 FH	*	1983 03 16.32153	12 51 16.33	-00 28 22.8	17.2	6 688
1983 FH		1983 03 16.35903	12 51 14.27	-00 28 06.9		688
1983 GF	*	1983 04 01.14097	10 04 28.58	+19 50 20.6	16.5	4 688
1983 GF		1983 04 01.20833	10 04 28.50	+19 50 12.5		688
1983 GG	*	1983 04 10.17986	10 09 53.47	+11 13 30.1	17.0	4 688
1983 GG		1983 04 10.23958	10 09 53.60	+11 13 40.8		688
1983 GH	*	1983 04 10.17986	10 14 29.86	+10 33 53.0	16.8	4 688
1983 GH		1983 04 10.23958	10 14 29.85	+10 33 45.2		688
1983 HA	*	1983 04 18.22222	13 27 47.68	-00 27 57.1	17.0	5 688
1983 HA		1983 04 18.26042	13 27 45.88	-00 27 31.6		688
1983 HB	*	1983 04 18.22222	13 31 04.05	-05 02 02.0	17.2	5 688
1983 HB		1983 04 18.26042	13 31 01.94	-05 01 51.0		688
1983 HC	*	1983 04 18.22222	13 34 25.95	-01 05 30.9	16.8	5 688
1983 HC		1983 04 18.26042	13 34 23.51	-01 05 22.6		688
1983 HD	*	1983 04 18.22222	13 35 28.34	-05 21 03.2	17.0	5 688
1983 HD		1983 04 18.26042	13 35 26.67	-05 20 54.7		688
1983 HE	*	1983 04 18.22222	13 41 03.63	-05 29 38.5	17.0	5 688
1983 HE		1983 04 18.26042	13 41 01.32	-05 29 34.5		688
1983 HF	*	1983 04 18.27604	13 36 35.79	-13 14 30.6	15.8	5 688
1983 HF		1983 04 18.30694	13 36 34.26	-13 14 04.5		688
1983 HG	*	1983 04 18.27604	13 36 56.16	-08 38 39.2	16.8	5 688
1983 HG		1983 04 18.30694	13 36 54.18	-08 38 40.3		688

1983	HH	*	1983	04	18.27604	13	43	10.77	-14	40	11.9	16.8	5	688
1983	HH		1983	04	18.30694	13	43	09.34	-14	39	59.4			688
1983	HJ	*	1983	04	18.27604	13	44	50.13	-07	14	49.2	16.5	5	688
1983	HJ		1983	04	18.30694	13	44	48.71	-07	14	41.7			688
1983	HK	*	1983	04	18.27604	13	52	15.65	-11	53	05.1	17.0	5	688
1983	HK		1983	04	18.30694	13	52	13.82	-11	52	59.3			688
1983	HL	*	1983	04	18.27604	13	52	38.27	-10	52	09.6	16.5	5	688
1983	HL		1983	04	18.30694	13	52	37.05	-10	52	18.7			688
1983	HM	*	1983	04	18.27604	13	54	12.33	-07	16	19.7	16.8	5	688
1983	HM		1983	04	18.30694	13	54	10.85	-07	16	06.5			688
1983	HN	*	1983	04	18.29167	14	12	55.75	-01	12	05.2	16.0	5	688
1983	HN		1983	04	18.32222	14	12	54.21	-01	11	57.3			688
1983	HO	*	1983	04	18.29167	14	16	19.26	-00	00	02.8	17.2	5	688
1983	HO		1983	04	18.32222	14	16	18.14	+00	00	04.9		3	688
1983	HP	*	1983	04	18.29167	14	16	19.61	+00	05	18.9	16.8	5	688
1983	HP		1983	04	18.32222	14	16	17.47	+00	05	20.6			688
1983	HQ	*	1983	04	18.29167	14	20	58.87	+00	01	54.8	17.0	5	688
1983	HQ		1983	04	18.32222	14	20	56.94	+00	01	53.8			688
1983	HR	*	1983	04	18.29167	14	29	38.56	-01	07	28.4	16.8	7	688
1983	HR		1983	04	18.32222	14	29	37.29	-01	07	18.1			688

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

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY BY C. W. TOMBAUGH. MEASURED BY E. BOWELL.

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.
778	1931 01	12.35833	09 06 15.17	+25 14 38.5		690
778	1931 01	13.35417	09 05 20.63	+25 13 01.2		690
778	1931 01	15.28472	09 03 31.36	+25 09 44.0		690
802	1931 01	12.35833	09 05 36.19	+26 03 32.7		690
802	1931 01	13.35417	09 04 40.73	+26 07 44.5		690
802	1931 01	15.28472	09 02 48.62	+26 15 47.9		690
941	1931 01	12.35833	09 08 56.14	+26 23 07.3		690
941	1931 01	13.35417	09 08 06.14	+26 28 38.1		690
941	1931 01	15.28472	09 06 26.19	+26 39 12.4		690
1050	1931 01	12.35833	09 02 54.96	+31 02 57.5		690
1050	1931 01	13.35417	09 01 50.31	+31 04 25.9	1	690
1050	1931 01	15.28472	08 59 43.73	+31 06 59.4		690
1241	1931 01	12.35833	09 18 30.90	+24 45 15.0		690
1241	1931 01	13.35417	09 17 40.85	+24 45 19.7		690
1241	1931 01	15.28472	09 16 01.19	+24 45 24.7		690
1675	1931 01	12.35833	09 17 18.68	+29 12 10.3		690
1675	1931 01	13.35417	09 16 26.03	+29 18 21.2		690
1675	1931 01	15.28472	09 14 38.20	+29 30 08.3		690
1792	1931 01	12.35833	09 03 49.44	+28 10 35.9		690
1792	1931 01	13.35417	09 02 56.34	+28 17 57.0		690
1792	1931 01	15.28472	09 01 09.54	+28 32 00.0		690
1931 AV	1931 01	12.35833	09 00 47.44	+26 22 35.9		690
1931 AV	1931 01	13.35417	09 00 00.85	+26 29 56.0	2	690
1931 AV	1931 01	15.28472	08 58 26.52	+26 44 05.0	2	690
1931 AY	1931 01	12.35833	09 07 12.76	+27 32 05.9		690
1931 AY	1931 01	13.35417	09 06 36.18	+27 44 16.1		690
1931 AY	1931 01	15.28472	09 05 20.20	+28 07 55.8		690
1931 AB1	1931 01	12.35833	09 23 49.90	+30 36 08.7		690
1931 AB1	1931 01	13.35417	09 23 08.34	+30 42 49.9		690
1931 AB1	1931 01	15.28472	09 21 43.42	+30 55 42.2		690

Note 1: right ascension uncertain. 2: declination uncertain.

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

Object	Date	UT	R. A. (1950)			Decl.	Obs.
15	1983 03	17.38940	11 50	43.89	-16 36	55.6	704
15	1983 03	17.42702	11 50	41.80	-16 36	46.6	704
86	1983 04	16.22029	12 50	20.98	+01 19	04.6	704
86	1983 04	16.27175	12 50	18.78	+01 19	14.8	704
89	1983 03	17.39942	11 38	18.22	-17 30	37.3	704
89	1983 03	17.43092	11 38	16.12	-17 30	30.7	704
110	1983 03	18.27140	12 46	44.08	+02 36	29.2	704
110	1983 03	18.29948	12 46	42.78	+02 36	35.5	704
115	1983 02	12.16402	08 43	29.26	+15 55	28.7	704
115	1983 02	12.21110	08 43	25.87	+15 55	20.8	704
139	1983 02	12.18031	10 03	29.94	+24 28	04.7	704
139	1983 02	12.24179	10 03	25.78	+24 28	12.3	704
196	1983 03	12.16628	10 15	27.30	+21 45	40.4	704
196	1983 03	12.27385	10 15	22.59	+21 45	59.8	704
201	1983 03	18.29435	12 38	21.70	+00 11	58.4	704
254	1983 02	12.18386	07 57	06.43	+28 11	42.0	704
254	1983 02	12.25180	07 57	02.49	+28 11	41.9	704
284	1983 04	16.21195	12 25	29.00	-11 57	50.0	704
284	1983 04	16.26777	12 25	26.06	-11 57	21.2	704
386	1983 04	10.17052	12 16	43.46	+08 47	25.4	704
386	1983 04	10.26957	12 16	39.42	+08 48	06.3	704
394	1983 02	12.16791	07 46	36.58	+28 21	57.4	704
394	1983 02	12.21991	07 46	34.09	+28 22	01.1	704
406	1983 04	10.15947	12 03	51.99	-05 28	06.7	704
406	1983 04	10.26043	12 03	47.65	-05 27	39.9	704
431	1983 03	18.27695	12 26	19.37	-00 19	24.1	704
431	1983 03	18.30464	12 26	18.04	-00 19	14.7	704
431	1983 04	10.16642	12 10	06.89	+01 28	24.5	704
431	1983 04	10.26646	12 10	02.89	+01 28	49.9	704
487	1983 02	12.19007	08 05	13.54	+23 51	41.5	704
487	1983 02	12.25979	08 05	10.28	+23 52	03.8	704
603	1983 02	12.16026	08 34	08.66	+26 26	46.8	704
603	1983 02	12.20868	08 34	05.36	+26 26	38.6	704
618	1983 03	12.15422	11 37	51.70	+24 01	16.2	704
618	1983 03	12.26783	11 37	46.57	+24 02	00.4	704
638	1983 02	12.17405	07 48	29.78	+25 15	51.3	704
638	1983 02	12.18701	07 48	29.27	+25 15	52.3	704
638	1983 02	12.22290	07 48	27.66	+25 16	02.3	704
638	1983 02	12.24895	07 48	26.21	+25 16	05.4	704
700	1983 04	12.24012	13 29	30.77	+04 47	19.7	704
757	1983 03	12.16071	11 02	29.80	+15 19	35.1	704
757	1983 03	12.27094	11 02	22.81	+15 19	52.7	704
949	1983 02	12.15657	07 29	40.43	+27 22	37.0	704
949	1983 02	12.20530	07 29	38.10	+27 22	32.8	704
994	1983 03	12.17089	09 58	02.06	+24 36	16.9	704
994	1983 03	12.27856	09 57	55.87	+24 36	05.5	704
996	1983 04	10.21974	12 53	58.18	-06 17	50.3	704
996	1983 04	10.27773	12 53	55.20	-06 17	32.5	704
1021	1983 03	12.22039	12 26	32.93	+18 58	50.2	704
1021	1983 03	12.23150	12 26	32.37	+18 58	57.8	704
1021	1983 03	12.28244	12 26	29.99	+18 59	21.4	704
1285	1983 04	10.17698	12 49	41.36	-13 07	43.6	704
1285	1983 04	10.27285	12 49	36.90	-13 07	23.5	704

1318		1983	03	13.33103	12	18	44.79	-02	03	59.6	704
1318		1983	03	13.37656	12	18	40.37	-02	04	37.4	704
1318		1983	03	13.40275	12	18	37.55	-02	05	04.2	704
1318		1983	03	16.16521	12	14	01.57	-02	44	37.8	704
1318		1983	03	16.20125	12	13	58.46	-02	45	08.1	704
1318		1983	03	17.21782	12	12	14.01	-02	59	52.0	704
1318		1983	03	17.22908	12	12	12.72	-02	59	58.8	704
1318		1983	03	18.16401	12	10	35.92	-03	13	22.6	704
1359		1983	04	12.20817	13	16	26.83	+04	25	48.1	704
1359		1983	04	12.24483	13	16	25.14	+04	25	55.8	704
1390		1983	03	17.31029	12	25	40.26	+12	46	55.4	704
1390		1983	03	17.38394	12	25	36.74	+12	47	02.5	704
1483		1983	04	12.32763	13	28	25.09	-02	43	11.3	704
1483		1983	04	12.34980	13	28	23.08	-02	43	11.2	704
1559		1983	04	10.41416	12	34	46.30	-08	41	52.4	704
1559		1983	04	11.16466	12	34	07.23	-08	38	26.1	704
1620		1983	02	12.26313	11	30	00.38	+14	55	04.2	704
2364		1983	02	12.19368	10	15	34.16	+27	27	32.7	704
2364		1983	02	12.25718	10	15	30.34	+27	27	52.2	704
1983	AG2	1983	02	11.42511	09	46	19.74	+22	14	15.2	704
1983	AG2	1983	02	14.12377	09	41	18.53	+21	31	02.8	704
1983	AG2	1983	02	15.21629	09	39	18.90	+21	13	24.9	704
1983	AG2	1983	02	15.28698	09	39	10.98	+21	12	14.8	704
1983	AG2	1983	02	16.16726	09	37	36.80	+20	57	55.9	704
1983	AG2	1983	02	16.23577	09	37	29.40	+20	56	48.3	704
1983	CE3 *	1983	02	12.39874	09	39	44.07	+02	28	23.2	704
1983	CE3	1983	02	12.43042	09	39	42.71	+02	28	39.5	704
1983	CE3	1983	02	13.14540	09	39	07.68	+02	35	12.9	704
1983	CE3	1983	02	14.16691	09	38	17.28	+02	44	39.3	704
1983	CE3	1983	02	15.22431	09	37	25.30	+02	54	37.1	704

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

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.	
2839	1962	10	01.24437	00 56 36.14	+00	00 30.8	760
2839	1962	10	01.28743	00 56 33.49	+00	00 22.7	760
1954	SD	1954	09	22.09095	22 49 24.97	-18 12 06.3	760
1954	SD	1954	09	22.14234	22 49 22.93	-18 12 05.9	760
1954	UZ	1954	10	22.26395	01 31 51.20	+04 26 13.9	760
1954	UZ	1954	10	22.31395	01 31 48.39	+04 25 57.6	760
1954	UB1	1954	10	22.26395	01 32 20.65	-00 12 20.6	760
1954	UB1	1954	10	22.31395	01 32 18.04	-00 12 39.8	760
1954	UC1	1954	10	22.26395	01 30 42.59	-01 07 18.6	760
1954	UC1	1954	10	22.31395	01 30 40.99	-01 07 57.2	760
1954	UM1	1954	10	24.28272	01 43 42.79	+32 30 06.3	760
1954	UM1	1954	10	24.32716	01 43 41.07	+32 29 53.7	1 760
1954	UP1	1954	10	24.28272	01 22 26.33	+27 53 55.4	760
1954	UU1	1954	10	25.15703	01 07 45.70	+01 00 01.3	760
1954	UU1	1954	10	25.20565	01 07 42.92	+01 00 23.2	760
1954	XK	1954	12	04.32707	04 10 34.22	+21 17 11.1	760
1954	XK	1954	12	04.37359	04 10 31.53	+21 16 42.5	760
1954	YE	1954	12	24.28259	06 37 59.32	+30 55 17.4	2 760
1954	YE	1954	12	24.34441	06 37 56.24	+30 55 12.4	2 760
1959	VC	1959	11	03.34273	02 37 19.89	+33 06 08.1	760
1962	WH	1962	11	24.23258	02 34 01.05	+23 17 33.0	760

Note 1: poor image. 2: approximate position on MPC 1199 somewhat in error.

ORBITAL ELEMENTS OF ONE-OPPOSITION MINOR PLANETS.

The orbit computers and authors of double designations are B = C. M. Bardwell, b = F. N. Bowman, c = C. Shoemaker, E = E. Bowell, 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
1931 AV	14.0	310119	3.84	47.31	71.83	6.69	0.1322	2.5541	3	3		M
1931 AB1	12.0	310119	305.61	154.59	44.86	9.45	0.1722	2.7880	3	3		M
1980 TQ	13.0	801008	67.53	103.08	196.11	12.01	0.1573	3.1144	5	5	1	M
1980 TE7	14.5	801008	42.49	133.40	188.20	7.87	0.2137	2.3864	27	3	1	M
1981 EO	15.5	810317	316.21	241.66	352.92	15.99	0.1686	2.5524	42	0		M
1981 ET	13.5	810317	238.23	317.86	358.72	9.64	0.2496	2.7534	40	0		M
1981 EU	14.5	810317	52.46	314.54	151.74	1.24	0.1607	3.0829	40	0		M
1981 EZ	15.5	810317	45.40	93.04	20.24	1.24	0.1772	2.4062	41	0		M
1981 ED1	15.0	810317	91.16	68.08	359.36	12.55	0.1400	2.6853	37	0		M
1981 EO11	16.5	810317	357.28	256.39	283.09	1.77	0.1660	2.3518	36	0		M
1981 EE17	17.5	810317	343.99	21.29	174.91	27.78	0.1336	1.9261	15	6		M
1981 EF17	14.5	810317	255.11	112.12	186.87	11.90	0.1809	2.6192	41	0		M
1981 EG17	15.0	810317	33.65	305.74	181.36	21.60	0.1975	3.1412	38	9		M
1981 EH17	15.0	810317	271.49	89.62	189.03	8.92	0.1085	3.0776	36	7		M
1981 EJ17	16.0	810317	57.38	277.21	190.67	6.44	0.1136	2.1968	41	0		M
1981 EK17	15.5	810317	270.41	76.57	205.85	5.67	0.1237	2.4667	40	7		M
1981 EL17	16.5	810317	313.76	40.75	191.87	14.06	0.0762	2.6206	40	0		M
1981 EM17	15.0	810317	192.84	152.31	199.52	7.46	0.2474	2.5555	36	0		M
1981 EN17	14.5	810317	168.37	157.06	210.67	4.58	0.1734	2.2945	40	0		M
1981 EQ17	17.0	810317	17.03	295.01	224.90	1.61	0.1022	2.3534	40	6		M
1981 ER17	14.0	810317	124.53	188.85	207.58	4.79	0.1571	3.1230	40	0		M
1981 ES17	16.0	810317	192.82	85.96	257.46	2.03	0.0963	2.7364	40	8		M
1981 ET17	15.5	810317	77.79	149.89	278.35	1.17	0.2407	2.6384	40	9		M
1981 EV17	17.5	810317	295.88	21.19	233.81	1.79	0.1512	2.4022	40	8		M
1981 EW17	16.0	810317	76.18	222.77	217.68	1.86	0.1523	2.4004	40	0		M
1981 EX17	17.5	810317	336.35	213.08	352.57	2.49	0.1476	2.3088	27	6		M
1981 EY17	15.0	810317	100.46	247.68	168.60	2.22	0.1558	2.4550	40	0		M
1981 EZ17	14.0	810317	332.81	34.94	174.29	14.94	0.1288	2.5732	27	0		M
1981 EA18	15.5	810317	39.11	320.40	170.62	11.87	0.0479	3.0452	27	6		M
1981 EB18	17.0	810317	317.31	55.51	174.71	4.00	0.1506	2.5795	40	0		M
1981 EC18	16.5	810317	286.71	81.94	176.59	5.66	0.0982	3.1919	27	7		M
1981 ED18	14.5	810317	336.97	5.42	193.64	2.62	0.0364	2.8485	40	0		M
1981 EE18	16.0	810317	49.95	110.70	356.48	4.66	0.1676	3.1711	27	7		M
1981 EF18	15.5	810317	138.27	205.96	183.49	5.33	0.0933	2.3012	40	0		M
1981 EG18	16.5	810317	231.42	322.70	345.26	4.68	0.0620	2.2620	40	9		M
1981 EH18	14.5	810317	209.14	183.27	148.75	1.42	0.1512	3.2561	27	9		M
1981 EJ18	15.0	810317	67.88	111.88	341.54	4.59	0.1191	3.1672	40	0		M
1981 EK18	13.5	810317	29.38	281.21	215.74	1.30	0.1283	3.1452	40	0		M
1981 EL18	16.0	810317	314.98	23.57	209.66	3.32	0.1427	2.5344	40	0		M
1981 EM18	15.0	810317	357.15	201.19	337.23	5.86	0.0992	2.2816	39	0		M
1981 EN18	16.0	810317	18.14	313.38	198.99	5.44	0.1173	3.1380	27	8		M
1981 EO18	15.0	810317	108.11	89.09	331.06	2.40	0.0589	2.3771	40	0		M
1981 EP18	15.0	810317	325.20	34.96	185.33	8.49	0.1366	3.1337	37	0		M
1981 EQ18	15.0	810317	117.92	253.38	147.21	1.87	0.1710	3.1468	40	8		M
1981 ER18	16.5	810317	43.49	131.40	344.68	5.06	0.1649	2.5585	40	0		M
1981 ES18	18.0	810317	329.84	11.67	207.07	1.97	0.1883	2.3356	40	0		M
1981 ET18	16.5	810317	39.45	139.10	341.54	4.03	0.1708	2.6162	37	8		M
1981 EU18	14.5	810317	268.84	196.71	87.48	0.21	0.1655	3.0820	40	0		M
1981 EV18	16.0	810317	286.32	50.75	206.52	4.15	0.0718	3.0041	40	0		M
1981 EW18	16.0	810317	207.67	344.43	348.49	6.60	0.1329	2.3409	40	6		M
1981 EY18	16.0	810317	90.33	151.01	278.90	2.17	0.1323	2.2098	40	0		M

1981	EZ18	15.0	810317	205.93	47.60	283.73	1.62	0.0439	2.6916	40 0	M
1981	EA19	16.0	810317	106.84	44.08	6.94	2.63	0.1582	2.5215	37 0	M
1981	EB19	16.0	810317	246.91	140.23	168.49	1.69	0.2317	2.2499	40 0	M
1981	EC19	17.0	810317	146.53	30.89	350.59	5.52	0.1120	2.2819	40 9	M
1981	ED19	14.0	810317	234.31	139.17	167.44	2.29	0.0728	2.6768	40 0	M
1981	EE19	16.0	810317	295.85	51.91	205.59	1.87	0.1649	2.4595	40 0	M
1981	EF19	16.5	810317	60.87	126.12	323.15	2.95	0.2232	2.5699	27 9	M
1981	EH19	16.0	810317	335.21	201.94	2.18	3.42	0.0936	2.2293	37 0	M
1981	EJ19	14.5	810317	9.29	20.64	142.09	0.66	0.1244	3.2014	40 0	M
1981	EK19	15.5	810317	273.72	303.24	335.19	4.93	0.1488	2.3243	40 0	M
1981	EL19	13.5	810317	224.74	138.77	182.23	6.77	0.1498	2.7853	40 0	M
1981	EM19	15.0	810317	143.89	56.29	333.98	1.25	0.0122	2.8572	40 0	M
1981	EN19	16.0	810317	69.60	240.96	207.38	3.49	0.1555	2.7412	27 0	M
1981	EO19	15.0	810317	83.96	262.21	181.30	8.69	0.0688	2.9845	40 0	M
1981	EP19	16.0	810317	142.39	220.06	165.28	3.00	0.1056	2.2465	40 0	M
1981	EQ19	15.0	810317	148.03	183.98	193.73	2.75	0.1823	2.3831	40 0	M
1981	ES19	18.5	810317	319.08	226.68	351.62	5.15	0.0347	2.2711	27 6	M
1981	ET19	17.5	810317	295.10	119.01	136.06	1.97	0.1420	2.4209	27 7	M
1981	EU19	15.0	810317	277.54	288.01	345.50	5.39	0.1389	2.3136	40 0	M
1981	EV19	15.5	810317	121.20	213.93	188.52	4.39	0.1340	3.1739	27 8	M
1981	EW19	17.5	810317	298.54	267.10	341.66	7.89	0.1092	2.3175	41 8	M
1981	EX19	15.5	810317	219.95	130.91	196.85	1.10	0.2121	2.1550	40 0	M
1981	EY19	16.0	810317	241.13	37.56	259.89	1.07	0.0301	2.8725	37 0	M
1981	EZ19	16.5	810317	240.69	320.97	342.20	3.76	0.0907	2.5429	40 7	M
1981	EB20	14.0	810317	48.42	204.75	273.65	1.12	0.0938	2.1515	40 0	M
1981	EC20	15.0	810317	206.71	75.10	262.91	1.18	0.2259	2.4000	37 0	M
1981	ED20	16.0	810317	68.65	75.46	7.29	4.87	0.2003	2.3795	40 0	M
1981	EF20	16.0	810317	356.46	12.33	167.39	7.91	0.1250	2.7335	27 0	M
1981	EG20	15.0	810317	247.83	320.65	343.23	6.91	0.1608	2.9256	40 0	M
1981	EH20	16.5	810317	302.27	65.69	183.09	2.44	0.1456	2.7071	40 0	M
1981	EJ20	15.5	810317	62.55	103.16	358.98	8.97	0.0947	2.6678	40 0	M
1981	EK20	15.5	810317	289.86	265.21	358.34	11.28	0.1646	2.6265	40 0	M
1981	EL20	15.0	810317	253.58	311.29	343.16	9.23	0.1091	3.0567	41 0	M
1981	EM20	15.5	810317	6.06	163.00	4.48	8.75	0.1117	3.9612	27 7	M
1981	EN20	17.5	810317	64.85	299.97	148.92	2.60	0.1873	2.2526	27 9	M
1981	EO20	17.0	810317	277.25	114.34	168.77	2.78	0.2204	2.3410	40 0	M
1981	EP20	15.5	810317	136.34	4.55	19.37	2.47	0.2229	2.3714	40 0	M
1981	EQ20	16.5	810317	251.91	119.38	176.26	2.41	0.1159	2.5455	27 8	M
1981	ER20	16.0	810317	64.50	275.13	182.72	13.99	0.1300	3.4941	27 7	M
1981	ES20	16.0	810317	203.26	353.61	341.74	2.14	0.0653	2.6812	27 7	M
1981	ET20	16.0	810317	351.89	189.89	356.43	9.04	0.1469	2.6268	40 0	M
1981	EU20	15.0	810317	232.14	3.73	308.44	1.03	0.0989	2.5970	40 0	M
1981	EV20	15.0	810317	74.96	115.00	340.72	6.54	0.0492	2.3430	41 0	M
1981	EW20	14.5	810317	236.64	296.06	15.09	0.91	0.1364	3.1699	40 0	M
1981	EX20	15.5	810317	292.92	87.16	165.39	7.73	0.0905	2.8003	40 0	M
1981	EY20	14.5	810317	198.63	19.43	321.60	1.15	0.1040	2.9432	40 0	M
1981	EZ20	16.0	810317	108.47	205.63	216.06	1.15	0.0566	2.7271	40 0	M
1981	EA21	16.0	810317	6.72	212.82	316.05	0.83	0.0375	2.8085	27 8	M
1981	EB21	16.0	810317	55.32	166.79	298.01	2.21	0.1593	3.1018	41 0	M
1981	EC21	15.5	810317	69.39	74.75	11.49	4.94	0.1697	2.6543	40 0	M
1981	ED21	15.5	810317	53.80	95.88	346.17	9.21	0.3534	2.7419	41 0	M
1981	EE21	15.5	810317	132.05	208.50	180.97	12.64	0.2081	2.7216	27 7	M
1981	EF21	16.5	810317	355.97	11.54	169.17	9.31	0.0997	2.5624	27 5	M
1981	EG21	15.0	810317	135.16	233.59	161.05	5.98	0.0806	3.4025	40 9	M
1981	EH21	14.0	810317	257.52	106.73	177.76	22.03	0.0493	3.2128	40 0	M
1981	EJ21	15.5	810317	354.23	19.46	164.82	9.60	0.1724	3.9710	27 7	M
1981	EK21	16.0	810317	301.52	257.23	346.39	7.46	0.0836	2.7564	41 0	M
1981	EL21	14.5	810317	199.01	130.11	210.63	2.10	0.0920	2.7199	40 0	M

1981	EM21	15.5	810317	35.39	58.93	66.65	1.57	0.1816	3.0775	40 0	M
1981	EN21	15.5	810317	329.42	20.72	187.41	1.77	0.0193	2.9089	27 9	M
1981	EO21	17.5	810317	117.22	84.41	316.27	1.61	0.2054	2.4017	27 7	M
1981	EP21	17.0	810317	304.22	259.68	357.70	11.36	0.2389	2.5502	40 0	M
1981	EQ21	14.5	810317	149.65	52.60	322.41	2.26	0.2828	3.0541	27 9	M
1981	ER21	14.5	810317	162.83	213.65	155.83	5.73	0.1222	3.2406	37 0	M
1981	ES21	15.0	810317	63.73	99.84	354.48	12.99	0.1607	2.6820	27 0	M
1981	ET21	17.0	810317	49.48	298.12	166.77	4.99	0.2106	2.6234	37 9	M
1981	EV21	15.5	810317	85.38	83.84	355.13	10.46	0.1048	3.0113	40 9	M
1981	EW21	14.5	810317	327.32	359.07	219.17	1.08	0.1253	2.6261	40 0	M
1981	EX21	15.0	810317	169.24	187.91	176.00	12.38	0.1975	2.6538	40 0	M
1981	EY21	14.0	810317	59.92	272.68	178.68	10.99	0.2288	3.1363	40 0	M
1981	EZ21	15.5	810317	287.62	49.78	204.07	1.54	0.0417	2.8392	37 0	M
1981	EA22	15.0	810317	241.69	126.63	170.14	12.68	0.0214	2.7366	27 8	M
1981	EB22	15.0	810317	13.85	47.02	110.89	2.19	0.1285	3.1360	40 9	M
1981	EC22	18.0	810317	15.02	345.78	173.94	1.53	0.0458	2.1462	27 9	M
1981	ED22	17.0	810317	326.98	40.15	174.20	2.32	0.0712	2.6119	40 0	M
1981	EE22	15.5	810317	352.84	171.75	13.16	4.97	0.1085	3.0868	40 0	M
1981	EF22	17.5	810317	32.75	295.08	193.21	2.69	0.2024	2.3471	27 8	M
1981	EG22	17.0	810317	334.13	226.06	348.83	9.86	0.1946	2.4344	41 0	M
1981	EH22	16.0	810317	298.86	40.26	207.23	1.97	0.0882	2.6114	27 0	M
1981	EJ22	16.0	810317	270.23	104.20	187.77	5.84	0.2271	2.4432	40 0	M
1981	EK22	15.5	810317	7.56	259.58	269.07	0.74	0.0588	2.9212	40 0	M
1981	EL22	19.0	810317	6.88	175.87	350.94	5.09	0.1636	2.3444	40 9	M
1981	EM22	18.5	810317	44.21	142.37	335.64	2.02	0.1570	2.3260	27 5	M
1981	EN22	17.5	810317	4.01	191.71	340.85	4.44	0.0625	2.5154	41 0	M
1981	EO22	18.0	810317	328.99	299.32	277.98	0.84	0.1354	2.4023	27 7	M
1981	EQ22	17.0	810317	270.00	53.73	215.45	1.77	0.0187	2.2399	40 0	M
1981	ER22	16.0	810317	174.00	245.85	114.64	0.46	0.2204	2.3865	37 9	M
1981	ET22	15.0	810317	45.55	89.06	26.34	2.58	0.1598	2.3956	40 0	M
1981	EU22	14.5	810317	0.64	196.72	339.30	1.93	0.0684	2.1767	40 0	M
1981	EV22	15.5	810317	135.74	219.48	168.32	3.30	0.2017	2.7753	40 8	M
1981	EW22	16.5	810317	44.43	278.13	188.15	3.07	0.2655	3.0717	27 8	M
1981	EY22	17.0	810317	285.43	91.15	176.01	3.30	0.1366	2.1559	40 0	M
1981	EZ22	16.5	810317	231.74	324.39	355.17	2.42	0.1838	2.2055	40 9	M
1981	EA23	16.0	810317	312.40	237.24	352.28	8.56	0.0496	2.6667	41 0	M
1981	EB23	15.5	810317	190.53	325.15	24.59	2.68	0.2067	2.4420	40 0	M
1981	EC23	15.0	810317	262.01	41.38	236.49	0.94	0.0529	3.1492	39 0	M
1981	ED23	16.0	810317	122.74	56.05	349.00	9.60	0.0675	3.0176	26 6	M
1981	EE23	16.5	810317	256.52	350.87	305.02	2.84	0.1661	2.6495	26 5	M
1981	EF23	15.0	810317	98.37	241.22	181.06	2.36	0.1288	2.2688	39 0	M
1981	EG23	15.0	810317	51.47	103.63	3.33	0.91	0.1649	3.2165	39 0	M
1981	EH23	15.5	810317	83.53	163.90	273.93	1.06	0.1223	2.4276	39 0	M
1981	EJ23	15.0	810317	70.14	111.06	347.39	4.05	0.0609	2.7192	36 0	M
1981	EK23	15.5	810317	236.26	129.88	184.85	3.10	0.1888	2.3598	26 8	M
1981	EL23	17.0	810317	82.60	279.50	159.11	3.45	0.1198	2.5182	36 8	M
1981	EM23	15.5	810317	104.13	48.59	3.78	9.34	0.1769	3.1936	26 7	M
1981	EN23	18.5	810317	323.56	245.36	342.45	1.78	0.1894	2.3224	26 6	M
1981	EO23	17.5	810317	98.22	175.62	250.72	0.96	0.1017	2.2053	26 4	M
1981	EP23	16.0	810317	327.23	224.92	355.12	15.74	0.1543	3.1067	26 8	M
1981	EQ23	14.5	810317	292.77	82.90	172.84	6.15	0.1033	3.1133	33 7	M
1981	ER23	18.0	810317	64.75	8.85	91.08	1.71	0.1053	2.5614	26 5	M
1981	ES23	17.0	810317	132.39	241.83	155.00	1.50	0.0985	2.5716	39 9	M
1981	ET23	16.5	810317	170.54	356.84	5.80	6.33	0.2047	2.2404	39 9	M
1981	EV23	16.0	810317	56.60	106.04	358.35	7.07	0.1525	2.5848	39 0	M
1981	EW23	18.0	810317	300.73	327.34	285.96	1.55	0.1771	2.3516	22 5	M
1981	EX23	16.0	810317	257.91	33.01	254.13	2.29	0.0872	2.7796	22 7	M
1981	EY23	17.0	810317	284.52	100.13	171.01	12.38	0.1808	2.6954	22 6	M

1981	EZ23	17.5	810317	321.50	8.75	210.26	2.90	0.0588	2.6257	22 5	M
1981	EA24	16.5	810317	290.89	269.46	355.99	8.05	0.1844	2.8872	22 5	M
1981	EB24	16.0	810317	72.77	82.35	12.22	4.40	0.0684	2.8135	35 0	M
1981	EC24	14.5	810317	273.15	84.39	191.28	2.97	0.1079	3.7831	22 6	M
1981	ED24	15.0	810317	33.06	335.58	166.87	9.10	0.0016	2.9483	35 9	M
1981	EE24	15.5	810317	97.84	25.43	43.03	2.71	0.0834	3.0285	32 9	M
1981	EF24	14.5	810317	254.04	277.95	21.93	5.29	0.1753	3.1591	35 9	M
1981	EG24	16.5	810317	304.12	296.66	312.05	1.72	0.1474	2.7589	22 6	M
1981	EH24	16.0	810317	134.68	8.14	28.26	2.31	0.0749	2.8717	22 6	M
1981	EJ24	16.5	810317	281.11	257.89	10.25	6.45	0.1119	2.4631	22 7	M
1981	FP	17.5	810317	342.85	17.71	180.99	2.40	0.1370	2.4450	40 0	M
1981	FQ	14.5	810317	317.02	202.71	30.25	0.32	0.1573	3.1113	41 0	M
1981	FR	15.5	810317	270.92	104.77	177.96	12.20	0.1542	2.6247	40 0	M
1981	GN1	13.5	810317	241.26	129.52	177.49	9.85	0.1285	2.3269	40 0	M
1981	GO1	16.0	810317	1.45	162.16	11.78	2.56	0.1441	2.3859	40 0	M
1982	SV	15.5	821107	335.22	243.32	189.20	21.91	0.3694	2.4155	77 0	M
1983	AH1	15.0	830126	11.46	355.65	108.97	16.62	0.2101	2.5487	36 9	M
1983	AE2	11.0	830126	85.83	297.27	84.26	30.83	0.1238	3.1604	33 8 1	M
1983	AF2	14.5	830126	62.20	106.05	310.00	22.06	0.1402	1.9608	33 7	M
1983	AG2	14.0	830126	26.60	109.56	330.70	21.85	0.3361	2.3150	58 0	M
1983	AU2	15.5	830126	4.21	161.21	308.30	2.72	0.0984	2.1822	2 5 2	M
1983	AW2	16.5	830126	358.94	20.10	98.80	1.35	0.2124	2.2110	2 4 2	M
1983	BC	15.0	830126	28.82	315.86	109.05	18.29	0.2733	2.6389	10 8	M
1983	BD	13.0	830106	82.74	249.81	114.72	16.49	0.1893	2.7902	11 8	M
1983	BE	13.0	830106	281.92	85.11	115.13	13.74	0.1154	2.8801	11 0	M
1983	BF	13.0	830106	18.71	321.81	126.44	1.72	0.0633	3.1795	11 7	M
1983	BH	14.4	830215	9.59	201.80	275.51	6.89	0.2027	2.3402	53 6	E
1983	CA3	13.5	830307	29.85	235.98	258.06	5.32	0.0653	2.7852	49 8	B
1983	CB3	14.5	830307	305.80	287.66	307.01	5.85	0.1281	2.2576	49 0	B
1983	CE3		830215	38.46	259.60	183.10	9.76	0.2597	2.6867	3 5	M
1983	DG	14.5	830307	306.53	236.17	353.74	8.09	0.1309	2.3984	50 0	M

Note 1: double designations 1980 TQ = 1980 TS10 (b); 1980 TE7 = 1980 TJ11 (b); 1983 AE2 = 1983 CD (c). 2: e assumed.

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

(2882)* 1981 OG = 1964 PL = 1970 QF1

Discovered 1981 July 26 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory. The identifications are by L. K. Kristensen, with assistance from K. W. Fabrin, Aalborg (MPC 6896).

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5

M 123.10277	(1950.0)	P	Q
n 0.17459002	Peri. 7.23084	+0.80761488	+0.58970029
a 3.1704661	Node 316.63281	-0.54127201	+0.73895548
e 0.1802095	Incl. 0.28639	-0.23405731	+0.32588091
P 5.65	B(1,0) 12.9		

Residuals in seconds of arc

640812	760	1.8+	2.1+	810828	688	(4.8-	2.9-)	821114	046	0.2+	0.4-
640812	760	0.1+	2.0+	810903	688	1.6+	1.5-	821115	688	0.5+	0.9-
700830	095	1.6-	1.1+	810903	688	0.4+	0.6-	821115	688	0.5+	3.6-
700909	095	(5.9+	4.2+)	810917	801	0.2+	1.6+	821116	046	0.6-	0.0
800517	095	0.7-	1.1-	810918	801	0.3+	2.3+	821116	046	1.2+	1.9-
810726	688	0.3-	0.3+	821018	801	1.9+	2.6+	821120	046	0.1-	1.6+
810726	688	0.1-	0.4+	821111	801	1.0+	0.6+	821120	046	1.9-	1.9+
810827	688	0.3-	0.1-	821111	046	0.0	1.9-	821212	688	0.5+	0.2-
810827	688	0.7-	0.6-	821111	046	1.4-	0.5-	821212	688	1.4+	1.7-
810828	688	(1.7-)	1.9-	821111	046	0.6-	1.1-				

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

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

(2883)* 1978 RG6 = 1940 LJ = 1950 LL = 1975 WA2 = 1980 DU4 = 1981 QV1
= 1983 AV2

Discovered 1978 Sept. 13 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5

M	354.18839		(1950.0)		P		Q
n	0.29294446	Peri.	150.77126		-0.94573207		+0.32442920
a	2.2453249	Node	48.17168		-0.30269796		-0.85904037
e	0.0820170	Incl.	1.41075		-0.11817277		-0.39597388
P	3.36	B(1,0)	14.5				

Residuals in seconds of arc

400601	078(74.3- 23.9+)X	781003	095	0.4-	0.0	830110	675	4.5-	0.4-
500606	760 0.5+ 0.6-	781007	095	0.1+	1.1+	830111	675	6.2+	0.6-
500606	760 0.1+ 1.0+	800221	095	1.2-	0.8+	830112	675	2.2+	0.6+
751129	330 2.2- 0.4-	810830	688	0.4+	3.8-	830112	675	3.2-	2.2-
780913	095 2.2- 2.4+	810830	688	1.8+	0.7-				
780927	095 0.5+ 1.2+	830110	675	1.7+	0.5-				

(2884)* 1981 ES22 = 1929 TE = 1956 RX = 1973 SB4 = 1973 UC3 = 1975 CD
= 1975 EP = 1978 PM2 = 1979 YO3

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

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5

M	267.46433		(1950.0)		P		Q
n	0.17908360	Peri.	15.10102		+0.55634036		-0.83065454
a	3.1172060	Node	41.10270		+0.75878497		+0.49688610
e	0.1677445	Incl.	1.94614		+0.33871930		+0.25123143
P	5.50	B(1,0)	13.0				

Residuals in seconds of arc

291009	690(28.0- 19.6-)X	780808	095	1.4-	0.8-	810311	413	0.4+	0.1-
560908	760 3.1- 1.4+	791224	095	1.4-	2.3+	810316	413	0.8+	1.2-
560908	760 1.5+ 1.3+	810302	413	0.9-	1.2-	810316	413	0.2-	0.3+
730925	095 1.7+ 2.9+	810302	413	1.2+	0.8-	810329	413	0.4-	0.2-
730927	095 0.9+ 1.7-	810303	413	1.7-	0.8-	810329	413	0.8+	0.2-
730928	095 (1.9- 12.4-)	810303	413	1.4+	0.5-	810407	413	0.8-	0.3+
731027	095 1.6+ 4.2-	810307	413	1.0-	0.5-	810407	413	0.9+	0.6+
750212	330 0.3+ 1.7+	810307	413	1.0+	0.9-	810408	413	1.0-	1.3+
750306	095 1.3- 1.1+	810311	413	0.6-	0.6-	810408	413	0.9+	1.2+

1975 TR3 = 1979 YJ4 = 1981 EU21

The key identification 1975 TR3 = 1981 EU21 is by S. J. Bus.

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	52.88211		(1950.0)		P		Q
n	0.26133783	Peri.	203.97780		+0.99962875		-0.01744475
a	2.4228995	Node	156.99240		+0.02370038		+0.93566569
e	0.1945058	Incl.	3.06957		-0.01344098		+0.35245621
P	3.77	B(1,0)	15.0				

Residuals in seconds of arc

751003	095 0.2+ 0.7-	810307	413	0.9-	0.9+	810329	413	0.8-	0.9+
751013	095 0.5- 0.3+	810307	413	2.5+	1.2-	810407	413	2.9-	0.8+
751106	095 0.8+ 1.0-	810311	413	1.9-	0.7+	810407	413	1.5+	0.4-
791218	095 0.2- 1.0+	810311	413	0.8+	1.3-	810408	413	1.5-	1.7+
810302	413 0.6- 0.1+	810316	413	0.6-	0.7-	810411	413	1.6-	0.5+
810302	413 4.4+ 2.1-	810316	413	0.1+	0.9-	810411	413	2.1+	0.6-
810303	413 1.1- 0.9+	810329	413	0.2-	0.6-				

1978 QO2 = 1981 EX22

The identification is by S. J. Bus.

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	298.31872		(1950.0)		P		Q
n	0.17963415	Peri.	314.72780	+0.85460877			-0.51901311
a	3.1108398	Node	76.54480	+0.48104206			+0.77939432
e	0.1789232	Incl.	0.96673	+0.19555662			+0.35095566
P	5.49	B(1,0)	13.5				

Residuals in seconds of arc

780826	414	0.3-	1.7+	810303	413	1.1-	0.1-	810316	413	1.1+	1.3-
780826	414	0.1-	0.6-	810303	413	1.7+	0.2+	810316	413	0.5+	0.2+
780831	095	1.1+	1.4-	810307	413	0.4-	0.7+	810405	413	2.1-	1.1+
780905	095	0.4+	0.5-	810307	413	0.6+	0.0	810405	413	1.4+	0.2-
780927	095	1.5-	0.1+	810311	413	0.2-	0.2-				
810302	413	1.5-	0.2+	810311	413	0.3+	0.0				

1981 EO17 = A905 UO = 1969 TL = 1979 SH3

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	14.98435		(1950.0)		P		Q
n	0.29223253	Peri.	210.12150	+0.53582526			-0.84384485
a	2.2489746	Node	207.50875	+0.78645186			+0.51112852
e	0.1576817	Incl.	3.54829	+0.30722101			+0.16332025
P	3.37	B(1,0)	15.5				

Residuals in seconds of arc

051026	024	0.4-	1.4+	810308	413	0.5-	0.7+	810407	413	1.9-	1.4+
691007	095	0.6+	1.9-	810312	413	1.1+	0.5+	810407	413	3.6+	1.3-
790924	095	1.0-	2.9+	810405	413	1.0-	0.7+	810410	413	1.7-	1.1+
810301	413	1.3-	1.0+	810405	413	2.5+	1.6-	810410	413	1.0+	1.7-
810301	413	0.6+	0.0	810406	413	1.7-	1.1+				
810308	413	0.6-	0.6+	810406	413	0.3+	0.4-				

1981 EU17 = 1977 EL3 = 1979 SQ7

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	307.94249		(1950.0)		P		Q
n	0.23940664	Peri.	253.40260	+0.41440993			-0.90992063
a	2.5686965	Node	172.04760	+0.87588385			+0.39351509
e	0.1788590	Incl.	7.29797	+0.24716771			+0.13111190
P	4.12	B(1,0)	14.0				

Residuals in seconds of arc

770315	381	0.7-	0.1+	810303	413	1.9+	1.9-	810329	413	0.9-	1.6+
770315	381	0.4+	0.9-	810307	413	0.5-	0.5+	810329	413	0.1-	0.3+
790923	095	0.0	0.0	810307	413	1.7+	1.6-	810407	413	1.2+	0.8-
810302	413	0.8-	0.4+	810311	413	0.8-	1.4+	810408	413	1.7-	1.3+
810302	413	1.6+	1.3-	810311	413	1.4+	0.7-	810408	413	0.7+	1.1-
810303	413	1.0-	0.6+	810316	413	1.6-	1.8+	810411	413	0.9-	0.3+

1981 EG19 = 1961 XB = 1975 NK1 = 1979 UT4 = 1979 WC6

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	45.02219		(1950.0)		P		Q
n	0.27336049	Peri.	173.07485	+0.97137124			-0.23696384
a	2.3513273	Node	200.65631	+0.21558780			+0.90917392
e	0.1810051	Incl.	2.74810	+0.09979887			+0.34241921
P	3.61	B(1,0)	14.0				

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

611203	760	(0.05-	0.01-)X	810307	413	0.4-	0.7+	810407	413	2.8-	0.7+
750712	095	0.3+	1.4-	810307	413	1.1+	0.4-	810407	413	0.6+	1.0-
791017	095	0.0	1.5-	810311	413	0.9-	0.9+	810408	413	0.4+	0.0
791117	095	0.6+	0.4-	810311	413	0.1+	0.3-	810411	413	1.0-	0.5-
810302	413	1.4-	0.6+	810316	413	0.5-	0.9+	810411	413	0.1-	0.9-
810302	413	0.2+	0.6-	810316	413	1.3+	1.0-				
810303	413	1.8+	1.1-	810329	413	0.4+	0.5-				

1981 EE20 = 1954 LF = 1977 RN3

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	82.53480		(1950.0)	P	Q
n	0.17664401	Peri.	87.60129	+0.09194969	+0.99576171
a	3.1458473	Node	187.67532	-0.91930654	+0.08413015
e	0.1717777	Incl.	0.84404	-0.38264962	+0.03715823
P	5.58	B(1,0)	13.0		

Residuals in seconds of arc

540607	760	0.4-	2.0-	810303	413	1.0+	0.1+	810407	413	0.9-	0.5-
540607	760	0.6+	1.6+	810307	413	0.3-	0.5+	810407	413	0.9+	0.8-
770912	095	1.8-	0.3+	810307	413	0.5+	0.2-	810408	413	1.1-	0.8+
770918	095	1.6+	0.1+	810311	413	0.8-	0.4+	810411	413	0.3+	0.8+
810302	413	0.4+	0.5-	810316	413	0.7-	0.2-	810411	413	0.3+	0.7+
810302	413	0.7-	0.5-	810316	413	1.9+	0.8-				
810303	413	1.0-	0.3+	810329	413	0.2+	0.5+				

1983 AV = 1931 AY

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	27.84425		(1950.0)	P	Q
n	0.22709076	Peri.	64.36044	-0.91151225	-0.34412849
a	2.6607492	Node	94.82861	+0.24668122	-0.89562893
e	0.2041512	Incl.	13.06259	+0.32908023	-0.28182334
P	4.34	B(1,0)	14.0		

Residuals in seconds of arc

310112	690	1.2+	0.7+	830112	688	0.2-	0.1+	830211	688	0.6+	0.5+
310113	690	2.0+	0.1+	830121	688	0.7-	0.2-	830309	688	0.2-	0.3+
310115	690	3.1-	0.5-	830121	688	0.2-	0.1-	830309	688	0.4-	0.2-
830112	688	0.1+	0.4+	830211	688	0.7+	0.1+				

2011 P-L = 1965 SX = 1975 TL = 1980 RW2 = 1980 TR6

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	285.41480		(1950.0)	P	Q
n	0.19668574	Peri.	87.44734	+0.24307283	+0.96928658
a	2.9283411	Node	196.76440	-0.93349498	+0.22326866
e	0.0902699	Incl.	7.45119	-0.26363369	+0.10312436
P	5.01	B(1,0)	13.0		

Residuals in seconds of arc

600924	675	0.7-	1.0-	601022	675	0.5-	0.7-	650923	330	0.3+	1.0-
600926	675	0.6-	0.6+	601022	675	0.2-	1.2+	751003	095	0.2-	0.9+
600928	675	0.2+	0.9+	601025	675	0.3+	0.4-	800908	095	1.0+	0.8+
600929	675	0.7+	0.1-	601025	675	1.5+	0.1+	801008	095	0.6-	1.2-
601017	675	0.4-	0.9+	601026	675	0.8-	0.2-				

4006 P-L = 1971 OQ1 = 1977 RM5 = 1980 FC9

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	120.45373		(1950.0)	P	Q
n	0.17478123	Peri.	63.39234	-0.07172295	+0.99565946
a	3.1681596	Node	202.72988	-0.96097846	-0.08490812
e	0.0450267	Incl.	8.83022	-0.26716325	+0.03811617
P	5.64	B(1,0)	12.5		

Residuals in seconds of arc

600925	675	0.4-	0.7-	600928	675	0.3+	0.6-	601026	675	1.3+	0.2-
600926	675	0.0	1.1-	601017	675	0.6+	0.2+	710729	095	0.4-	2.0-
600926	675	0.4+	0.5-	601022	675	0.9+	0.1+	770909	095	0.4-	0.1+
600928	675	0.6+	0.3-	601024	675	0.3+	0.9+	800316	095	0.2-	2.3-

4583 P-L = 1978 JY1 = 1980 UB1 = 1982 CB

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	112.59576		(1950.0)		P		Q
n	0.20061724	Peri.	336.66602		-0.80711807		-0.59037694
a	2.8899572	Node	167.14795		+0.54439564		-0.74680219
e	0.0636220	Incl.	1.01371		+0.22845963		-0.30617243
P	4.91	B(1,0)	13.5				

Residuals in seconds of arc

600924	675	0.2+	1.4-	601025	675	0.2+	0.1+	820214	046	0.6-	0.1-
600926	675	0.3+	0.7-	601026	675	0.7+	0.1-	820214	046	0.5+	0.8-
600927	675	0.2-	0.5-	780506	095	0.7-	2.5-	820216	046	0.3-	0.2-
600928	675	0.5-	1.0-	801017	095	0.1+	0.3-	820216	046	0.9+	0.1-
601017	675	0.8+	0.2+	820213	046	1.0-	0.4-				
601022	675	0.2-	0.2+	820213	046	0.2-	0.8-				

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

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

(2885)* 1939 TC = 1959 SF = 1969 RK = 1969 RT1 = 1976 YR = 1979 OO13
= 1981 EA20

Discovered 1939 Oct. 7 by Y. Vaisala at Turku. The key identification 1939 TC = 1981 EA20 is by S. J. Bus. The double designation 1969 RK = 1969 RT1 was found by H. Oishi (JAM 852).

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5

M	37.71161		(1950.0)		P		Q
n	0.29446934	Peri.	43.81839		+0.84143806		-0.54026714
a	2.2375667	Node	348.87154		+0.48092366		+0.75692910
e	0.1947554	Incl.	2.87036		+0.24636240		+0.36765439
P	3.35	B(1,0)	15.0				

Residuals in seconds of arc

391007	062	0.2-	2.5-	761220	095	2.2+	2.1+	810316	413	4.5+	1.8-
391017	062	1.7+	0.7-	790731	095	1.8-	1.5-	810329	413	1.6-	0.1+
391018	062	0.6+	0.3-	810302	413	1.5-	0.2+	810329	413	0.4-	0.2+
391111	062	0.3+	2.8-	810302	413	0.0	0.1+	810407	413	1.9-	0.9-
590929	024	0.8-	0.6+	810303	413	1.7-	1.0+	810407	413	0.8+	0.7-
690908	095	1.5+	5.8+	810307	413	1.2+	0.2-	810408	413	1.8-	0.5+
690913	095	0.9-	1.1-	810311	413	0.1-	0.8+	810408	413	2.7+	1.3-
761216	095	4.1-	0.9+	810311	413	0.4+	0.5+	810411	413	1.3-	0.1+
761218	095	1.4+	0.7+	810316	413	0.7-	0.7+	810411	413	0.8+	0.6-

(2886)* 1965 YG = 1979 QR8 = 1979 SF5 = 1979 UO2 = 1981 EU23

Discovered 1965 Dec. 20 at the Purple Mountain Observatory. The key identification 1965 YG = 1981 EU23 is by S. J. Bus.

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5

M	328.71388		(1950.0)		P		Q
n	0.27082992	Peri.	331.86923		+0.18691527		-0.98213372
a	2.3659467	Node	107.35109		+0.90550195		+0.16363335
e	0.1563432	Incl.	1.30980		+0.38095787		+0.09293802
P	3.64	B(1,0)	14.5				

Residuals in seconds of arc

651220	330	1.0+	0.1+	810303	413	0.8+	0.9+	810329	413	1.0+	0.5+
660116	330	1.1-	0.3-	810307	413	0.5-	0.4+	810407	413	1.2-	0.8-
660128	330	0.0	0.4+	810307	413	1.2+	0.1+	810407	413	0.5+	0.7-
790820	095	0.2+	0.3-	810311	413	0.3-	0.4-	810408	413	0.3+	0.1+
790923	095	1.6+	0.4+	810311	413	0.7+	0.4-	810411	413	0.8-	0.4-
791016	095	1.7-	0.9-	810316	413	0.2-	0.4-	810411	413	0.1+	0.2-
810303	413	1.5-	0.0	810316	413	0.3-	0.9+				

(2887)* 1977 QD5 = 1936 ML = 1939 FW = 1980 KC2 = 1980 MG = 1983 DH

Discovered 1977 Aug. 22 by N. S. Chernykh at the Crimean Astrophysical Observatory. The key identification 1977 QD5 = 1983 DH is by E. Bowell (MPC 7838).

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5

M	331.47922	(1950.0)		P	Q
n	0.29024540	Peri.	148.25465	-0.05197673	+0.99640313
a	2.2592233	Node	118.68878	-0.93142777	-0.02419699
e	0.1496830	Incl.	4.37550	-0.36019539	-0.08121154
P	3.40	B(1,0)	14.0		

Residuals in seconds of arc

360619	078(62.4+ 30.5-)X	770912	095	0.2-	0.6-	830309	688	0.1+	1.3-		
390318	062	1.7-	2.1-	800518	095	0.1-	1.1+	830309	688	0.2-	0.0
390322	062	0.9+	0.5+	800616	095	0.8+	0.0	830316	688	0.5+	0.2+
770822	095	1.3-	3.0-	830219	688	0.8-	1.1-	830316	688	0.3-	0.9+
770907	095	2.5+	1.2+	830219	688	0.1+	0.4-				

(2888)* 1982 TO = 1931 TO1 = 1936 DE = 1948 TC1 = 1955 XB = 1965 UM

= 1970 EJ1 = 1973 AN2 = 1977 FP2 = 1981 KG

Discovered 1982 Oct. 13 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5

M	68.77734	(1950.0)		P	Q
n	0.29063737	Peri.	78.02368	+0.35479788	-0.93471842
a	2.2571915	Node	351.11339	+0.79781626	+0.31411513
e	0.1323221	Incl.	7.62311	+0.48745017	+0.16623227
P	3.39	B(1,0)	14.5		

Residuals in seconds of arc

311007	024(12.8- 3.0-)	700302	805	0.9-	0.9-	821020	095	0.5+	1.2-		
311012	024	0.1-	1.8+	700302	805	0.3+	0.3+	821021	095	0.8-	1.6+
360220	024	0.4-	0.2+	730102	095	1.2+	1.6+	821022	095	0.9+	0.5+
481009	012	2.4-	0.2+	730103	095	1.1-	1.9+	821024	688	1.1-	1.3-
551205	760	0.7-	0.7-	770326	095	0.1+	0.2-	821024	688	1.0-	1.1-
551205	760	1.3+	0.6-	810528	809	0.4+	0.2-	821024	095	3.5+	2.6-
551212	760	1.6+	2.0+	810528	809	0.4+	0.3-	821109	095	0.0	2.3+
551212	760	0.9-	0.2+	821013	688	(3.0-	6.0-)	821111	095	1.5-	0.9-
651028	760(89.4+ 23.0-)X	821013	688	2.7-	2.0-	821112	095	2.2+	0.2+		
700302	805	1.7-	1.5-	821014	095	2.3+	1.8-				

1975 XY1 = 1975 VJ6

The double designation is by C. M. Bardwell (MPC 5835).

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	10.96080	(1950.0)		P	Q
n	0.26642353	Peri.	223.15125	-0.34574044	-0.85964256
a	2.3919671	Node	250.38506	+0.93225165	-0.26914157
e	0.2144890	Incl.	23.53491	+0.10663208	-0.43425508
P	3.70	B(1,0)	13.5		

Residuals in seconds of arc

751106	095	0.3-	1.0+	751129	330	0.0	0.3-	751230	330	0.8-	1.1+
751123	330	(1.0-	5.1-)	751201	095	(2.1+	12.1+)	820911	675	2.5+	1.2+
751126	330	1.3+	0.5+	751222	330	0.4-	0.1+	820912	675	2.3-	0.3-

1978 SP2 = 1981 EP17

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	156.64923		(1950.0)		P		Q
n	0.24061338	Peri.	71.31718	-0.15320114		+0.98709050	
a	2.5601008	Node	190.21414	-0.97650994		-0.15846777	
e	0.1406657	Incl.	15.27229	-0.15151808		+0.02324451	
P	4.10	B(1,0)	13.5				

Residuals in seconds of arc

780926	095	0.8-	1.1-	810308	413	0.5+	0.3-	810406	413	1.0-	1.2+
781002	095	0.9-	2.7+	810308	413	0.5+	0.8-	810406	413	0.3-	0.2+
781008	095	1.8+	2.1-	810312	413	0.4-	0.7+	810407	413	0.7-	1.4+
810301	413	0.5-	0.1-	810405	413	0.8-	0.9+	810407	413	0.6+	0.6-
810306	413	0.9-	0.2+	810405	413	1.7+	1.8-	810410	413	1.0+	1.7-

1980 TB5 = 1955 QU

The 1983 observations were identified by E. Bowell. The double designation 1955 QU = 1955 RM (MPC 1453) is invalid.

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	6.74921		(1950.0)		P		Q
n	0.23930259	Peri.	255.59529	-0.38673159		+0.92138039	
a	2.5694410	Node	351.34856	-0.71547995		-0.32624968	
e	0.1764593	Incl.	14.90415	-0.58183083		-0.21123287	
P	4.12	B(1,0)	13.0				

Residuals in seconds of arc

550823	760	0.2+	0.2- X	801009	675	2.3-	1.0-	801107	675	2.6+	2.0+
801007	675	2.5-	0.7-	801010	675	0.1+	1.1+	830317	688	0.9-	1.5-
801008	675	0.7-	2.3-	801105	675	4.1+	0.4+	830317	688	0.2+	0.3+

1980 XM = 1952 HA3

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	304.58356		(1950.0)		P		Q
n	0.19022930	Peri.	282.99293	+0.57816980		+0.81283261	
a	2.9942311	Node	22.77787	-0.65947585		+0.51669351	
e	0.0997037	Incl.	10.54783	-0.48042823		+0.26894417	
P	5.18	B(1,0)	12.5				

Residuals in seconds of arc

520426	711	2.7+	2.6+ Y	801201	046	0.1-	0.2+	801230	046	0.2-	0.0
520426	711	2.9-	3.0- Y	801208	046	1.6+	0.1+	830418	688	0.0	0.0
801013	095	0.0	0.4-	801208	046	0.6+	0.7+	830418	688	0.1+	0.1+
801201	046	0.4-	1.4-	801230	046	1.5-	0.6+				

1981 EX18 = 1961 UN = 1971 MD = 1977 RW1 = 1978 XP

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	79.65023		(1950.0)		P		Q
n	0.17771058	Peri.	113.25236	+0.09377122		+0.99556532	
a	3.1332477	Node	162.12336	-0.92212405		+0.08969918	
e	0.1479259	Incl.	1.40500	-0.37535875		+0.02835051	
P	5.55	B(1,0)	12.5				

Residuals in seconds of arc

611018	760(40.1- 49.2+)X	810302	413	0.3-	1.0-	810316	413	2.3+	0.9-
710627	095 0.7+ 0.3-	810303	413	1.0-	0.0	810329	413	0.7-	0.2+
710630	095 0.5- 1.9-	810303	413	0.6+	0.5-	810329	413	0.0	0.0
770908	095 0.0 0.0	810307	413	0.3-	0.0	810407	413	0.6+	0.5+
781203	675 0.3- 0.7-	810307	413	0.5+	1.0-	810408	413	1.0-	0.7+
781205	675 0.5+ 0.0	810311	413	0.2-	0.7+	810408	413	0.2+	0.4-
781206	675 0.1+ 1.1-	810311	413	0.5+	0.4-	810411	413	0.5-	0.2-
781206	675 0.5+ 1.0-	810316	413	2.2-	1.1+	810411	413	0.7+	0.9-

1981 YS = 1938 JD = 1951 YL2 = 1961 XM = 1961 XZ = 1962 AB

The double designation 1961 XM = 1981 XZ is by B. Potter (MPC 2280).

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	112.18202	(1950.0)	P	Q
n	0.19645090	Peri. 26.91467	-0.29591126	-0.92164883
a	2.9306744	Node 81.17960	+0.82423103	-0.37916837
e	0.1550778	Incl. 14.71445	+0.48278331	+0.08243051
P	5.02	B(1,0) 13.0		

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

380505	024(12.2+ 75.8+)X	811203	330	1.4-	3.0+	811228	046	1.4+	0.3-
511227	711 1.4- 2.0+ Y	811219	330	4.5-	0.0	820116	330	0.8+	0.3-
511228	711 3.5+ 6.2- Y	811220	046	0.3-	0.3+	820120	330	1.7+	0.1-
611206	012 2.2- 2.2+	811220	046	2.1+	0.9+	830416	046	0.4+	1.0+
611206	760(65.7- 61.9-)X	811222	330	0.2+	0.2-	830416	046	0.4+	0.0
620110	760(0.03+ 0.00-)X	811228	046	0.1+	0.4-				

1982 YC1 = 1938 QC = 1952 BD2 = 1969 OB

The 1981 observation was identified by L. G. Karachkina and G. R.

Kastel'.

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	37.37219	(1950.0)	P	Q
n	0.25289371	Peri. 193.30901	-0.73276064	-0.64234651
a	2.4765374	Node 304.41692	+0.64658851	-0.55435299
e	0.1837834	Incl. 15.80003	+0.21209701	-0.52922935
P	3.90	B(1,0) 13.0		

Residuals in seconds of arc

380819	024 3.1- 0.6-	810905	095	3.1+	9.5+	830106	095	2.2-	1.2-
520129	711 4.1+ 2.3+ Y	821223	095	1.1-	1.5-	830109	095	3.0-	0.7-
690716	095(11.8- 9.2-)	821223	095	1.7+	0.8-	830114	095	2.9-	1.7-
690717	095 0.2- 7.5-	821224	095	3.4+	1.5+				

1983 AX2 = 1936 QK1 = 1953 SB = 1955 DO = 1957 KP = 1964 PA

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	86.19019	(1950.0)	P	Q
n	0.17615579	Peri. 91.44330	+0.50606385	-0.84737793
a	3.1516571	Node 326.54952	+0.62867634	+0.49002658
e	0.2241310	Incl. 16.95864	+0.59047898	+0.20451061
P	5.60	B(1,0) 11.5		

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

360816	094(11.1- 29.1-)X	550218	760(0.12- 0.01+)X	830115	095	1.9-	0.5+
530916	062 0.5- 0.6-	570522	081(0.05- 0.01-)X	830210	095	1.3-	0.9+
530916	062 0.0 0.2-	640806	760(0.03+ 0.02-)X	830305	095	3.6+	0.4-
530916	062 0.3+ 1.0+	830113	095 0.2+ 0.8-				

4805 P-L = 1981 EP22

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	214.05880		(1950.0)		P		Q
n	0.26661850	Peri.	198.19578	-0.77873302			+0.62719402
a	2.3908008	Node	20.66769	-0.57043333			-0.69845179
e	0.1607772	Incl.	2.31092	-0.26111432			-0.34466324
P	3.70	B(1,0)	16.0				

Residuals in seconds of arc

600924	675	0.4+	0.4-	810302	413	1.2-	0.2+	810329	413	0.8-	0.1+
600924	675	0.3-	1.5-	810303	413	1.8-	0.6+	810407	413	0.7-	0.5-
600926	675	0.5-	0.9-	810303	413	3.1+	0.5-	810407	413	0.9+	0.2-
600926	675	0.4-	0.4-	810307	413	0.7-	0.5+	810408	413	1.5-	0.0
600927	675	0.5-	0.2-	810307	413	0.7+	0.2+	810408	413	0.6+	0.4-
600927	675	2.4+	1.2+	810311	413	0.7-	0.0	810411	413	0.7+	0.4-
600928	675	0.1-	0.1+	810311	413	0.6+	0.5-				
600928	675	0.1-	0.3+	810316	413	0.1+	0.5-				

6073 P-L = 1981 ER19

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	107.57025		(1950.0)		P		Q
n	0.21740587	Peri.	290.46136	+0.05700317			+0.99817202
a	2.7391937	Node	342.76982	-0.88881797			+0.04157705
e	0.0489883	Incl.	3.88723	-0.45470127			+0.04386296
P	4.53	B(1,0)	15.0				

Residuals in seconds of arc

600924	675	0.5-	0.2+	601026	675	0.4+	0.2+	810311	413	0.4-	0.2+
600925	675	0.2-	0.7+	810302	413	2.0-	0.4+	810311	413	0.9+	0.4-
600926	675	0.7+	0.4+	810302	413	4.7+	1.8-	810316	413	0.7-	0.5+
600928	675	0.1-	0.4-	810303	413	2.9-	0.2+	810329	413	1.6-	0.3+
601017	675	0.2+	1.1-	810303	413	1.6+	0.7-	810329	413	0.5-	0.0
601022	675	0.5-	0.6+	810307	413	1.4-	1.4+	810408	413	0.7-	1.1+
601024	675	0.5+	0.7+	810307	413	0.3+	0.4+	810408	413	2.9+	0.8-

6560 P-L = 1969 FE = 1979 DP

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	119.57416		(1950.0)		P		Q
n	0.29050197	Peri.	52.91063	-0.95001963			-0.30827036
a	2.2578973	Node	109.08757	+0.26729413			-0.88480062
e	0.0883886	Incl.	2.99136	+0.16129646			-0.34942415
P	3.39	B(1,0)	15.0				

Residuals in seconds of arc

600924	675	0.1+	0.6+	601017	675	1.0-	0.0	690323	095	0.0	0.1-
600926	675	0.8+	0.5-	601022	675	1.6-	0.3-	790227	330	0.0	0.0
600927	675	0.2+	0.0	601024	675	0.1+	0.5-				
600928	675	0.4+	0.4+	601026	675	0.9+	0.2+				

6562 P-L = 1971 SW = 1972 VX = 1979 BX1

Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)

M	302.26502		(1950.0)		P		Q
n	0.17692382	Peri.	55.96829	-0.50522577			-0.86219633
a	3.1425296	Node	64.41969	+0.77762059			-0.47339301
e	0.1730894	Incl.	2.34703	+0.37423673			-0.18032342
P	5.57	B(1,0)	13.5				

Residuals in seconds of arc

600924	675	0.7+	0.3+	601017	675	0.9-	0.2+	710916	808	0.3+	0.6-
600926	675	0.4-	1.1+	601022	675	1.8-	1.0-	721109	095	0.2+	1.0-
600927	675	1.2+	0.5+	601024	675	0.2+	0.8-	790124	095	0.1+	0.9+
600928	675	0.6+	0.8+	601026	675	0.5-	0.2+				

6611 P-L = 1976 QJ1 = 1976 SH8
 Epoch 1983 Sept. 23.0 ET = JDE 2445600.5 (J-P)
 M 222.95593 (1950.0) P Q
 n 0.24602174 Peri. 240.34799 +0.44877675 -0.89364050
 a 2.5224424 Node 182.99003 +0.83534756 +0.42048019
 e 0.2165448 Incl. 2.71076 +0.31748053 +0.15685364
 P 4.01 B(1,0) 15.0

Residuals in seconds of arc

600924	675	1.7+	1.6-	601022	675	1.3-	0.2+	760826	095	3.4-	0.3+
600926	675	0.9+	1.0-	601024	675	0.2+	0.2+	760928	095	2.7+	1.0+
601017	675	0.6-	1.3+	601026	675	0.6-	0.3-				

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NEW NAMES OF MINOR PLANETS.

(2065) Spicer = 1959 RN

Discovered 1959 Sept. 9 at the Goethe Link Observatory, Indiana University.

Named in memory of Edward H. Spicer (1906-1983), professor of anthropology at the University of Arizona, and a former president of the American Anthropological Association. His assistance was a major factor in the success of the negotiations with the Schuk Toak District Council and the Papago Tribal Council in 1955 to obtain permission for the site testing of Kitt Peak as a possible location for an astronomical observatory. Name proposed by F. K. Edmondson.

(2180) Marjaleena = 1940 RJ

Discovered 1940 Sept. 8 by H. Alikoski at Turku.

Named by the discoverer in honor of his daughter, Marjaleena Johnsson.

(2194) Arpola = 1940 GE

Discovered 1940 Apr. 3 by Y. Vaisala at Turku.

Named for the discoverer's summer cottage, located in the archipelago off Turku. A keen sailor, the discoverer yachted from Turku to Arpola about a hundred times each year.

(2204) Lyyli = 1943 EQ

Discovered 1943 Mar. 3 by Y. Vaisala at Turku.

Named in honor of Lyyli Heinanen (nee Hartonen), a disciple of the discoverer. In 1927, as a student, she assisted in the first attempt to measure a length of 192 m by the Vaisala interference method. It was winter, the weather was very cold, and it seemed that the experiment would fail. She urged that they try once more, and the interferences were found. Later she taught mathematics in secondary school and was for many years chairman of the society Mikkelin Ursa for amateur astronomers.

(2243) Lonnot = 1941 SA1

Discovered 1941 Sept. 25 by Y. Vaisala at Turku.

Named for Elias Lonnot (1802-1884), a physician in Kajaani and later professor of the Finnish language in Helsinki. While on extensive walking tours he wrote down a great number of runes and other traditional poems. He published the Finnish national epic Kalevala and numerous medical, philological and other works.

(2257) Kaarina = 1939 QB

Discovered 1939 Aug. 18 by H. Alikoski at Turku.

Named by the discoverer in honor of his daughter, Kaarina Soini.

(2258) Viipuri = 1939 TA

Discovered 1939 Oct. 7 by Y. Vaisala at Turku.

Named for an old Finnish town on the Gulf of Finland. Runic inscriptions mention Viipuri as a market place in the eleventh century.

(2268) Szmytowna = 1942 VW

Discovered 1942 Nov. 6 by L. Oterma at Turku.

Named in honor of the distinguished Polish scientist Maria Szmytowna on the occasion of her eightieth birthday, 1983 March 26. A professor of inorganic and analytical chemistry at the Akademia Medyczna w Poznaniu, she has done extensive research work for half a century on waters and mineral springs and is an active member of many societies in the areas of balneology and hydrobiology.

(2291) Kevo = 1941 FS

Discovered 1941 Mar. 19 by L. Oterma at Turku.

Named for the field station of the University of Turku's Kevo Subarctic Research Institute. Situated in the valley of the river Kevo in far Lapland at latitude 69 45', the station cooperates with other research centers above the Arctic circle in the study of biology and earth sciences.

(2292) Seili = 1942 RM

Discovered 1942 Sept. 7 by Y. Vaisala at Turku.

Named for an island, some 30 km from Turku, originally a leper colony, and in 1619 the site of the first hospital in Finland. In 1965 a station of the University of Turku's Archipelago Institute was established there.

(2299) Hanko = 1941 SZ

Discovered 1941 Sept. 25 by Y. Vaisala at Turku.

Named for a Finnish town on the Gulf of Finland, famous for its beaches and regattas. Its harbor was already known in the thirteenth century.

(2332) Kalm = 1940 GH

Discovered 1940 Apr. 4 by L. Oterma at Turku.

Named for Pehr Kalm (1716-1779), a Finnish naturalist, and from 1747 the first professor of economics at the old Academia Aboensis. His numerous explorations took him as far as North America. He also founded a botanic garden for the Academia and wrote the pioneering work 'Flora Fennica'.

(2333) Porthan = 1943 EP

Discovered 1943 Mar. 3 by Y. Vaisala at Turku.

Named for Henrik Gabriel Porthan (1739-1804), historian and professor of oratory at the Academia Aboensis. This 'Father of Finnish History' pioneered the study of history based on facts, rather than on fantasy.

(2379) Heiskanen = 1941 ST

Discovered 1941 Sept. 21 by Y. Vaisala at Turku.

Named in memory of V. A. Heiskanen (1895-1971), professor of geodesy at the Helsinki Technological University and director of the Finnish Geodetic Institute. After 1950 he worked mainly at the Ohio State University in Columbus, where he began the program in geodesic sciences. He also wrote several Finnish textbooks on astronomy.

(2397) Lappajarvi = 1938 DV

Discovered 1938 Feb. 22 by Y. Vaisala at Turku.

Named for a lake, which proved to be a meteorite crater, in the western part of central Finland.

- (2437) Amnestia = 1942 RZ
Discovered 1942 Sept. 14 by M. Vaisala at Turku.
Named to honor the work of Amnesty International.
- (2454) Olaus Magnus = 1941 SS
Discovered 1941 Sept. 21 by Y. Vaisala at Turku.
Named for Olaus Magnus (1490-1557), the last Catholic archbishop of Sweden, who spent most of his life in exile in Rome. His 'Carta Marina' was the first map to represent Finland approximately correctly.
- (2464) Nordenskiold = 1939 BF
Discovered 1939 Jan. 19 by Y. Vaisala at Turku.
Named for the Finnish explorer Nils Adolf Erik Nordenskiold (1832-1901). He conducted many Arctic expeditions and first navigated the northeast passage from the Atlantic to the Pacific Oceans in 1878-1879.
- (2479) Sodankyla = 1942 CB
Discovered 1942 Feb. 6 by Y. Vaisala at Turku.
Named for a large country commune, more than 12 000 square kilometers in area, in southern Lapland. A temporary observatory was erected there during the first Polar Year (1882-1883), and since 1913 the Finnish Academy of Science and Letters has maintained its Geophysical Observatory there.
- (2486) Metsahovi = 1939 FY
Discovered 1939 Mar. 22 by Y. Vaisala at Turku.
Named for a donated farm near Helsinki, where various institutes have established their observing stations: the Finnish Geodetic Institute for space geodesy, the University of Helsinki for astrophysics, and the Helsinki Technological University for radio astronomy.
- (2487) Juhani = 1940 RL
Discovered 1940 Sept. 8 by H. Alikoski at Turku.
Named by the discoverer in honor of his son.
- (2489) Suvorov = 1975 NY
Discovered 1975 July 11 by L. I. Chernykh at the Crimean Astrophysical Observatory.
Named in memory of Alexandr Vasil'evich Suvorov (1729-1800), military theoretician, famous for his progressive ideas, renowned among the common people of Russia.
- (2501) Lohja = 1942 GD
Discovered 1942 Apr. 14 by L. Oterma at Turku.
Named for a town, ridge and lake in southern Finland. An important market in the Middle Ages, Lohja is famous for its limestone quarries. In the old mine shafts, 150 m under the earth's surface, the Finnish Geodetic Institute has established a station for studying earth tides.
- (2502) Nummela = 1943 EO
Discovered 1943 Mar. 3 by Y. Vaisala at Turku.
Named for a village in southern Finland. On a plateau atop the Lohja Ridge lies the Finnish Geodetic Institute's standard base line, 864 m long.
- (2505) Hebei = 1965 UJ
Discovered 1975 Oct. 31 at the Purple Mountain Observatory.
Named for a province in northern China. The Yellow River and the Great Wall run through the province.

(2512) Tavastia = 1940 GG

Discovered 1940 Apr. 3 by Y. Vaisala at Turku.

The Latin name for the province of Hame, in the lake district of south-central Finland. Archeological studies show evidence for the presence of man 9000 years ago. The Finns began to settle there in the fifth century.

(2530) Shipka = 1978 NC3

Discovered 1978 July 9 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Named for the mountainous site of the victory of the Russian and Bulgarian troops during the Russo-Turkish war of 1877-1878.

(2535) Hameenlinna = 1939 DH

Discovered 1939 Feb. 17 by Y. Vaisala at Turku.

Named for an old town in the province of Hame. The town grew around a thirteenth-century castle (linna) in an ancient populated area. With its ridges, hills and lakes, Hameenlinna presents the most fascinating views. It has been an important educational center since 1639, and the renowned Finnish composer Jean Sibelius received his schooling there.

(2547) Hubei = 1964 TC2

Discovered 1964 Oct. 9 at the Purple Mountain Observatory.

Named for a province in the central part of China, located in the middle stretch of the Yangtze River.

(2551) Decabrina = 1976 YX1

Discovered 1976 Dec. 16 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Named in memory of the revolutionary group of noblemen that led the uprising against tsarist autocracy and servitude in 1825.

(2573) Hannu Olavi = 1953 EN

Discovered 1953 Mar. 10 by H. Alikoski at Turku.

Named by the discoverer in honor of his son.

(2638) Gadolin = 1939 SG

Discovered 1939 Sept. 19 by Y. Vaisala at Turku.

Named for Jacob Gadolin (1719-1802), the first astronomer at the Academia Aboensis, and Johan Gadolin (1760-1852), the 'Father of Finnish Chemistry'.

(2639) Planman = 1940 GN

Discovered 1940 Apr. 9 by Y. Vaisala at Turku.

Named for Anders Planman (1724-1803), an astronomer and from 1763 professor of physics at the Academia Aboensis. A participant in the international program to determine the astronomical unit, he made careful observations in Kajaani of the 1761 and 1769 transits of Venus.

(2640) Hallstrom = 1941 FN

Discovered 1941 Mar. 18 by L. Oterma at Turku.

Named for Gustaf Gabriel Hallstrom (1775-1844), professor of physics and several times rector at the Academia Aboensis. His efforts led to the acquisition by Turku of an astronomical observatory and the regular appointment of an observer.

(2678) Aavasaksa = 1938 DF1

Discovered 1938 Feb. 24 by Y. Vaisala at Turku.

Named for a hill in the Tornio river valley. Just south of the Arctic circle, it offers a fine view of the midnight sun each June.

- (2679) Kittisvaara = 1939 TG
Discovered 1939 Oct. 7 by Y. Vaisala at Turku.
Named for the mountain that is the northern terminus of the 'degree measurement' conducted in the Tornio valley in 1736-1737 by Maupertuis.
- (2690) Ristiina = 1938 DG1
Discovered 1938 Feb. 24 by Y. Vaisala at Turku.
Named for a country commune in the lake district of southern Finland.
In 1968 over sixty prehistoric rock-paintings were found there in the largest discovery of this type in Fennoscandia.
- (2714) Matti = 1938 GC
Discovered 1938 Apr. 5 by H. Alikoski at Turku.
Named by the discoverer in honor of his son.
- (2715) Mielikki = 1938 US
Discovered 1938 Oct. 22 by Y. Vaisala at Turku.
Named for the mistress of the forest in Kalevala. Her favor was needed for successful hunting. Mielikki is a common girl's name in Finland.
- (2716) Tuulikki = 1939 TM
Discovered 1939 Oct. 7 by Y. Vaisala at Turku.
Also a common girl's name in Finland, Tuulikki was a fairy of the forest in Kalevala.
- (2717) Tellervo = 1940 WJ
Discovered 1940 Nov. 29 by L. Oterma at Turku.
Named for the fairy of the forest in Kalevala, whose duty was to protect domestic animals from beasts of prey. Tellervo is another common Finnish girl's name.
- (2733) Hamina = 1938 DQ
Discovered 1938 Feb. 22 by Y. Vaisala at Turku.
Named for an old Finnish town on the eastern Gulf of Finland. It was known as a market place and harbor as early as the fourteenth century.
- (2737) Kotka = 1938 DU
Discovered 1938 Feb. 22 by Y. Vaisala at Turku.
Named for an important Finnish industrial center and harbor, a town constructed mainly on islands on the eastern Gulf of Finland.
- (2750) Loviisa = 1940 YK
Discovered 1940 Dec. 30 by Y. Vaisala at Turku.
Named for a small Finnish town, an important export harbor, on the eastern Gulf of Finland. About two-thirds of its area is water.
- (2774) Tenojoki = 1942 TJ
Discovered 1942 Oct. 3 by L. Oterma at Turku.
Named for the border stream between Norway and Finland.
- (2791) Paradise = 1977 CA
Discovered 1977 Feb. 13 by S. J. Bus at Palomar.
Named for the town of Paradise, California. Situated on the lower slopes of the Sierras, this old mining town is now a thriving community and the home of Schelte and Alice Bus, parents of the discoverer.
- (2802) Weisell = 1939 BU
Discovered 1939 Jan. 19 by Y. Vaisala at Turku.

Named in memory of the discoverer's father, whose many technical and scientific interests included astronomy.

(2803) Vilho = 1940 WG

Discovered 1940 Nov. 29 by L. Oterma at Turku.

Named in memory of Vilho Vaisala (1889-1969), a meteorologist and geophysicist, elder brother of Y. Vaisala. Director of the Finnish Meteorological Institute (1919-1948) and professor of meteorology at the University of Helsinki (1948-1958), he was well known for devising scientific apparatus, including a radiosonde used in many countries.

(2804) Yrjo = 1941 HF

Discovered 1941 Apr. 19 by L. Oterma at Turku.

Named in memory of Yrjo Vaisala (1891-1971), originator and leader of the minor-planet program at Turku, and a teacher of the discoverer. He became the first professor of physics at the University of Turku in 1923 and soon afterward he inaugurated instruction in astronomy. He was also well known as a geodesist and an esperantist. An important contributor to astronomical fields as diverse as optics and orbit determination, he planned and constructed the observatory and the telescopes at Iso-Heikkila. In 1951 he was appointed a member of the Academy of Finland. On his initiative the University of Turku then established the Astronomical-Optical Institute at Tuorla, and he served as its director until his death.

(2805) Kalle = 1941 UM

Discovered 1941 Oct. 15 by L. Oterma at Turku.

Named in memory of Kalle Vaisala (1893-1968), an algebraist and number theorist, younger brother of Y. Vaisala. Author of various textbooks for secondary school and university, he was professor of mathematics at Tartu University during 1919-1922, at the University of Turku during 1922-1938, and at the Helsinki Technological University during 1939-1960.

(2820) Iisalmi = 1942 RU

Discovered 1942 Sept. 8 by Y. Vaisala at Turku.

Named for a town, parts of which date back to the stone age, in the lake district of central Finland. Known for the spa Runni, monuments there memorialize important events in Finnish history. Iisalmi was also the home of famous writers, including Eero Salmelainen, who compiled the celebrated collection of 'Finnish Folk-Tales', published during 1852-1866.

(2826) Ahti = 1939 UJ

Discovered 1939 Oct. 18 by Y. Vaisala at Turku.

Named for the male water sprite in Kalevala. Ahti is a common boy's name in Finland.

(2827) Vellamo = 1942 CC

Discovered 1942 Feb. 11 by L. Oterma at Turku.

Named for the female water sprite in Kalevala. Vellamo is yet another common girl's name in Finland.

(2828) Iku-Turso = 1942 DL

Discovered 1942 Feb. 18 by L. Oterma at Turku.

Named for the deep-sea monster in Kalevala.

(2840) Kallavesi = 1941 UP

Discovered 1941 Oct. 15 by L. Oterma at Turku.

Named for a large lake, dotted with numerous islands, in south-central Finland. After the ice age the lake was a gulf, and it still contains relics from the Arctic Ocean.

(2841) Puijo = 1943 DM

Discovered 1943 Feb. 26 by L. Oterma at Turku.

Named for a hill on Lake Kallavesi. An important tourist and skiing center, it is well known for its beautiful view.

(2864) Soderblom = 1983 AZ

Discovered 1983 Jan. 12 by B. A. Skiff at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Lawrence A. Soderblom, planetary geologist with the U.S. Geological Survey. His contributions to planetary science have included research in the geologic histories of both rocky and icy planets and satellites, image processing of spacecraft imagery, and a vigorous program of lunchtime volleyball. A former chief of the U.S.G.S. Branch of Astrogeologic Sciences, he was a member of the Viking and Voyager imaging teams, the Galileo Near Infrared Mapping Spectrometer Team, and the Space Science Advisory Committee.

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EPHEMERIDES.

4583 P-L		a,e,i = 2.89, 0.06, 1				Elements MPC 7939		
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 05 26		15 41.90	-18 08.5	1.888	2.897	173.5	2.3	17.1
1983 06 05		15 33.87	-17 41.7					
1983 06 15		15 27.22	-17 19.8	1.980	2.910	150.9	9.8	17.5
1983 06 25		15 22.54	-17 05.2					
1983 07 05		15 20.11	-16 59.4	2.162	2.922	130.1	15.4	17.9
1983 07 15		15 20.03	-17 02.7					
1983 07 25		15 22.24	-17 14.8	2.405	2.935	111.6	18.8	18.2
1983 08 04		15 26.54	-17 34.4					
1983 08 14		15 32.76	-18 00.1	2.679	2.947	95.1	20.0	18.4

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.
1983 05 26		17 02.28	-19 00.5	2.063	3.059	166.9	4.3	19.0
1983 06 05		16 52.84	-18 41.5					
1983 06 15		16 43.29	-18 23.6	2.048	3.050	168.3	3.9	19.0
1983 06 25		16 34.55	-18 08.5					
1983 07 05		16 27.37	-17 58.1	2.143	3.038	145.8	10.8	19.3
1983 07 15		16 22.27	-17 53.5					
1983 07 25		16 19.53	-17 55.6	2.325	3.024	125.0	16.0	19.6
1983 08 04		16 19.21	-18 04.0					
1983 08 14		16 21.21	-18 18.3	2.560	3.007	106.4	18.9	19.9

6560 P-L		a,e,i = 2.26, 0.09, 3				Elements MPC 7943		
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 05 26		17 47.87	-20 37.9	1.292	2.257	156.4	10.3	17.6
1983 06 05		17 38.31	-20 43.5					
1983 06 15		17 27.46	-20 49.6	1.262	2.277	177.5	1.1	17.1
1983 06 25		17 16.81	-20 56.1					
1983 07 05		17 07.73	-21 03.6	1.332	2.297	155.8	10.5	17.7
1983 07 15		17 01.23	-21 13.5					
1983 07 25		16 57.88	-21 26.6	1.488	2.316	134.5	18.2	18.1
1983 08 04		16 57.79	-21 43.2					
1983 08 14		17 00.81	-22 02.7	1.704	2.335	116.1	22.9	18.5
1983 08 24		17 06.66	-22 24.0					
1983 09 03		17 14.98	-22 45.6	1.954	2.352	100.2	25.0	18.9

(2884) 1981 ES22		a,e,i = 3.12, 0.17, 2				Elements MPC		7936
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 05 26		20 13.62	-22 09.0	2.735	3.396	123.0	14.5	18.2
1983 06 05		20 12.46	-22 20.3					
1983 06 15		20 09.18	-22 37.5	2.500	3.370	143.2	10.4	17.9
1983 06 25		20 03.92	-22 59.5					
1983 07 05		19 57.01	-23 23.9	2.350	3.343	165.1	4.5	17.5
1983 07 15		19 48.97	-23 48.3					
1983 07 25		19 40.56	-24 10.1	2.307	3.315	171.4	2.6	17.4
1983 08 04		19 32.54	-24 27.2					
1983 08 14		19 25.68	-24 38.6	2.375	3.286	149.1	9.1	17.7
1983 08 24		19 20.59	-24 44.1					
1983 09 03		19 17.64	-24 44.1	2.536	3.256	128.1	14.1	17.9
1983 09 13		19 16.99	-24 39.2					
1983 09 23		19 18.64	-24 30.0	2.758	3.225	108.9	17.1	18.1
1983 10 03		19 22.47	-24 16.5					
1983 10 13		19 28.29	-23 58.9	3.009	3.194	91.5	18.2	18.3
1983 10 23		19 35.88	-23 36.9					
1983 11 02		19 45.00	-23 10.2	3.262	3.162	75.5	17.7	18.5

1978 QO2		a,e,i = 3.11, 0.18, 1				Elements MPC		7937
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 05 26		20 24.96	-19 55.3	2.514	3.145	120.0	16.2	18.4
1983 06 05		20 25.13	-19 58.7					
1983 06 15		20 23.07	-20 09.7	2.266	3.110	139.6	12.2	18.0
1983 06 25		20 18.83	-20 27.7					
1983 07 05		20 12.67	-20 51.1	2.095	3.075	161.2	6.1	17.7
1983 07 15		20 05.03	-21 17.4					
1983 07 25		19 56.66	-21 43.7	2.025	3.039	175.8	1.4	17.3
1983 08 04		19 48.40	-22 07.2					
1983 08 14		19 41.13	-22 25.9	2.066	3.004	153.0	8.8	17.7
1983 08 24		19 35.59	-22 38.6					
1983 09 03		19 32.26	-22 45.3	2.200	2.969	131.7	14.7	17.9
1983 09 13		19 31.40	-22 46.0					
1983 09 23		19 33.05	-22 41.0	2.400	2.933	112.4	18.4	18.2
1983 10 03		19 37.07	-22 30.3					
1983 10 13		19 43.28	-22 14.0	2.633	2.898	95.2	20.1	18.4
1983 10 23		19 51.42	-21 51.8					
1983 11 02		20 01.24	-21 23.3	2.873	2.864	79.5	19.9	18.5

1981 EU17		a,e,i = 2.57, 0.18, 7				Elements MPC		7937
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 07 05		23 44.86	+01 24.5	2.037	2.500	104.9	23.2	18.1
1983 07 15		23 50.78	+01 48.6					
1983 07 25		23 54.71	+01 56.5	1.773	2.461	121.5	20.6	17.7
1983 08 04		23 56.37	+01 45.8					
1983 08 14		23 55.56	+01 14.4	1.551	2.422	140.7	15.4	17.2
1983 08 24		23 52.27	+00 22.1					
1983 09 03		23 46.74	-00 49.4	1.401	2.383	162.8	7.2	16.8
1983 09 13		23 39.56	-02 14.9					
1983 09 23		23 31.71	-03 46.0	1.347	2.346	173.0	3.0	16.5
1983 10 03		23 24.30	-05 13.0					
1983 10 13		23 18.42	-06 27.0	1.395	2.310	149.2	12.8	16.8
1983 10 23		23 14.90	-07 21.4					
1983 11 02		23 14.16	-07 53.4	1.528	2.276	127.8	20.2	17.2
1983 11 12		23 16.31	-08 02.6					
1983 11 22		23 21.22	-07 50.2	1.714	2.243	109.3	24.5	17.5
1983 12 02		23 28.60	-07 18.6					
1983 12 12		23 38.13	-06 30.0	1.924	2.214	93.5	26.4	17.8

1981 EX18		a,e,i = 3.13, 0.15, 1				Elements MPC		7941
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 07 25		01 15.70	+07 26.8	2.672	3.031	100.8	19.2	17.5
1983 08 04		01 19.43	+07 44.3					
1983 08 14		01 21.22	+07 49.7	2.444	3.060	118.5	16.9	17.3
1983 08 24		01 20.94	+07 42.4					
1983 09 03		01 18.56	+07 22.5	2.260	3.089	138.6	12.5	17.0
1983 09 13		01 14.19	+06 50.6					
1983 09 23		01 08.18	+06 08.9	2.153	3.118	160.9	6.1	16.8
1983 10 03		01 01.10	+05 20.9					
1983 10 13		00 53.63	+04 31.0	2.151	3.147	175.3	1.5	16.5
1983 10 23		00 46.58	+03 44.3					
1983 11 02		00 40.63	+03 05.4	2.265	3.175	152.0	8.4	17.0
1983 11 12		00 36.30	+02 37.7					
1983 11 22		00 33.91	+02 22.9	2.477	3.203	130.1	13.6	17.3
1983 12 02		00 33.54	+02 21.7					
1983 12 12		00 35.16	+02 33.5	2.756	3.231	110.2	16.6	17.6
1983 12 22		00 38.62	+02 57.2					
1984 01 01		00 43.72	+03 31.2	3.069	3.258	92.1	17.6	17.9

1981 EE20		a,e,i = 3.15, 0.17, 1				Elements MPC		7938
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 07 25		01 36.87	+10 06.0	2.809	3.068	94.9	19.3	18.1
1983 08 04		01 41.59	+10 31.0					
1983 08 14		01 44.46	+10 45.2	2.575	3.101	112.1	17.6	17.9
1983 08 24		01 45.32	+10 47.7					
1983 09 03		01 44.07	+10 38.3	2.374	3.135	131.5	13.9	17.7
1983 09 13		01 40.74	+10 16.9					
1983 09 23		01 35.53	+09 44.4	2.240	3.168	153.3	8.2	17.4
1983 10 03		01 28.89	+09 03.3					
1983 10 13		01 21.43	+08 16.7	2.204	3.201	176.7	1.0	17.0
1983 10 23		01 13.92	+07 29.4					
1983 11 02		01 07.10	+06 46.1	2.285	3.233	159.5	6.2	17.5
1983 11 12		01 01.59	+06 10.8					
1983 11 22		00 57.86	+05 46.5	2.473	3.265	136.9	11.9	17.8
1983 12 02		00 56.09	+05 34.7					
1983 12 12		00 56.34	+05 35.8	2.740	3.296	116.2	15.5	18.1
1983 12 22		00 58.51	+05 49.0					
1984 01 01		01 02.45	+06 13.2	3.052	3.326	97.5	17.0	18.4

1982 HE1		a,e,i = 2.33, 0.18, 9				Elements MPC		7017
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 08 14		02 25.67	+08 56.4	2.178	2.602	103.1	22.3	18.8
1983 08 24		02 29.01	+09 16.1					
1983 09 03		02 29.87	+09 25.4	1.961	2.629	121.2	19.2	18.5
1983 09 13		02 28.00	+09 24.2					
1983 09 23		02 23.36	+09 12.9	1.789	2.654	142.1	13.4	18.2
1983 10 03		02 16.13	+08 53.0					
1983 10 13		02 06.85	+08 26.8	1.698	2.675	165.6	5.3	17.9
1983 10 23		01 56.43	+07 58.2					
1983 11 02		01 45.97	+07 31.9	1.715	2.695	168.3	4.3	17.9
1983 11 12		01 36.58	+07 12.5					
1983 11 22		01 29.15	+07 03.9	1.846	2.711	144.5	12.2	18.3
1983 12 02		01 24.19	+07 08.0					
1983 12 12		01 21.92	+07 25.4	2.063	2.725	122.8	17.7	18.7
1983 12 22		01 22.29	+07 55.6					
1984 01 01		01 25.07	+08 37.0	2.333	2.736	103.6	20.4	19.0
1984 01 11		01 30.01	+09 28.2					
1984 01 21		01 36.83	+10 27.4	2.622	2.745	86.6	21.0	19.3

6073 P-L		a,e,i = 2.74, 0.05, 4				Elements MPC		7943
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 08 14		02 21.27	+16 48.2	2.378	2.766	101.6	21.0	19.6
1983 08 24		02 25.40	+17 26.6					
1983 09 03		02 27.28	+17 55.1	2.141	2.776	119.1	18.5	19.3
1983 09 13		02 26.69	+18 12.4					
1983 09 23		02 23.55	+18 17.4	1.947	2.786	139.2	13.6	19.0
1983 10 03		02 17.99	+18 09.3					
1983 10 13		02 10.44	+17 48.0	1.830	2.795	161.7	6.4	18.7
1983 10 23		02 01.66	+17 15.5					
1983 11 02		01 52.63	+16 35.4	1.818	2.804	172.0	2.8	18.5
1983 11 12		01 44.37	+15 53.0					
1983 11 22		01 37.78	+15 14.1	1.918	2.812	149.2	10.4	18.9
1983 12 02		01 33.40	+14 43.4					
1983 12 12		01 31.54	+14 24.2	2.111	2.820	127.4	16.1	19.2
1983 12 22		01 32.20	+14 18.1					
1984 01 01		01 35.24	+14 25.0	2.365	2.828	108.0	19.3	19.6
1984 01 11		01 40.42	+14 44.0					
1984 01 21		01 47.50	+15 13.5	2.646	2.835	90.7	20.3	19.8

1981 EY17		a,e,i = 2.46, 0.16, 2				Elements MPC		7932
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 08 14		02 22.40	+13 03.6	1.701	2.161	-1.54	-7.1	18.5
1983 08 24		02 31.72	+13 34.8					
1983 09 03		02 38.83	+13 52.4	1.472	2.138	-1.83	-8.1	18.1
1983 09 13		02 43.26	+13 55.2					
1983 09 23		02 44.65	+13 42.6	1.278	2.117	-2.18	-9.7	17.6
1983 10 03		02 42.80	+13 14.5					
1983 10 13		02 37.81	+12 32.3	1.144	2.100	-2.48	-11.4	17.1
1983 10 23		02 30.35	+11 39.8					
1983 11 02		02 21.54	+10 43.4	1.096	2.087	-2.55	-12.2	16.7
1983 11 12		02 12.86	+09 51.4					
1983 11 22		02 05.78	+09 11.9	1.146	2.078	-2.34	-11.5	17.2
1983 12 02		02 01.33	+08 50.5					
1983 12 12		02 00.08	+08 49.6	1.281	2.073	-2.00	-9.8	17.6
1983 12 22		02 02.13	+09 08.6					
1984 01 01		02 07.27	+09 45.1	1.472	2.073	-1.70	-8.1	18.0
1984 01 11		02 15.20	+10 35.9					
1984 01 21		02 25.54	+11 37.4	1.693	2.076	-1.48	-6.7	18.4

4006 P-L		a,e,i = 3.17, 0.05, 9				Elements MPC		7938
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 08 14		02 39.69	+15 17.4	2.931	3.230	97.9	18.1	17.8
1983 08 24		02 44.03	+15 17.9					
1983 09 03		02 46.53	+15 07.9	2.671	3.238	115.7	16.3	17.6
1983 09 13		02 47.00	+14 47.1					
1983 09 23		02 45.37	+14 15.2	2.451	3.245	135.6	12.5	17.3
1983 10 03		02 41.73	+13 32.9					
1983 10 13		02 36.31	+12 41.6	2.306	3.252	157.8	6.7	17.0
1983 10 23		02 29.63	+11 44.4					
1983 11 02		02 22.32	+10 45.1	2.268	3.259	176.4	1.1	16.6
1983 11 12		02 15.14	+09 48.4					
1983 11 22		02 08.85	+08 58.9	2.347	3.265	154.2	7.6	17.1
1983 12 02		02 04.00	+08 20.3					
1983 12 12		02 01.00	+07 54.6	2.531	3.271	131.9	13.0	17.4
1983 12 22		02 00.02	+07 42.7					
1984 01 01		02 01.05	+07 44.0	2.786	3.277	111.5	16.2	17.7
1984 01 11		02 04.02	+07 57.2					
1984 01 21		02 08.76	+08 20.6	3.076	3.282	93.2	17.4	17.9

1981	ET22	a,e,i = 2.40, 0.16, 3				Elements MPC		7934
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 08 14	02	35.92	+14 42.5	2.017	2.394	-1.18	-6.7	19.0
1983 08 24	02	43.69	+15 25.8					
1983 09 03	02	49.38	+16 00.0	1.750	2.358	-1.41	-7.5	18.6
1983 09 13	02	52.57	+16 24.0					
1983 09 23	02	52.90	+16 36.9	1.516	2.322	-1.68	-8.8	18.2
1983 10 03	02	50.12	+16 38.0					
1983 10 13	02	44.24	+16 26.3	1.343	2.286	-1.92	-10.4	17.7
1983 10 23	02	35.77	+16 02.8					
1983 11 02	02	25.69	+15 30.1	1.258	2.251	-2.01	-11.7	17.0
1983 11 12	02	15.37	+14 53.1					
1983 11 22	02	06.32	+14 18.9	1.279	2.216	-1.87	-11.8	17.5
1983 12 02	01	59.70	+13 53.9					
1983 12 12	01	56.26	+13 43.0	1.390	2.183	-1.62	-10.6	17.9
1983 12 22	01	56.26	+13 48.3					
1984 01 01	01	59.56	+14 09.8	1.562	2.152	-1.40	-9.1	18.2
1984 01 11	02	05.91	+14 45.8					
1984 01 21	02	14.97	+15 34.0	1.763	2.122	-1.25	-7.8	18.5

1981	EH23	a,e,i = 2.43, 0.12, 1				Elements MPC		7934
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 08 14	02	52.63	+17 46.1	1.934	2.248	-1.33	-5.7	19.3
1983 08 24	03	03.26	+18 34.5					
1983 09 03	03	12.01	+19 13.2	1.687	2.226	-1.58	-6.0	19.0
1983 09 13	03	18.43	+19 41.5					
1983 09 23	03	22.08	+19 58.6	1.464	2.205	-1.89	-6.9	18.5
1983 10 03	03	22.59	+20 03.4					
1983 10 13	03	19.73	+19 54.8	1.288	2.186	-2.21	-8.3	18.1
1983 10 23	03	13.72	+19 32.4					
1983 11 02	03	05.22	+18 57.3	1.187	2.170	-2.39	-9.9	17.6
1983 11 12	02	55.44	+18 12.7					
1983 11 22	02	45.96	+17 25.2	1.186	2.156	-2.31	-10.5	17.7
1983 12 02	02	38.21	+16 42.2					
1983 12 12	02	33.29	+16 10.3	1.281	2.145	-2.02	-9.7	18.1
1983 12 22	02	31.72	+15 53.9					
1984 01 01	02	33.55	+15 53.9	1.449	2.137	-1.72	-8.1	18.5
1984 01 11	02	38.59	+16 09.5					
1984 01 21	02	46.50	+16 38.2	1.660	2.133	-1.49	-6.6	18.9

1981	ED19	a,e,i = 2.68, 0.07, 2				Elements MPC		7933
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 08 14	03	10.88	+16 08.2	2.420	2.631	-0.92	-3.4	18.5
1983 08 24	03	18.95	+16 29.3					
1983 09 03	03	25.09	+16 41.0	2.179	2.646	-1.03	-3.6	18.3
1983 09 13	03	28.97	+16 43.1					
1983 09 23	03	30.30	+16 35.2	1.961	2.662	-1.17	-4.1	18.0
1983 10 03	03	28.94	+16 17.6					
1983 10 13	03	24.86	+15 50.4	1.793	2.677	-1.31	-4.8	17.7
1983 10 23	03	18.37	+15 15.1					
1983 11 02	03	10.12	+14 34.1	1.711	2.692	-1.39	-5.5	17.3
1983 11 12	03	01.01	+13 51.2					
1983 11 22	02	52.18	+13 11.3	1.739	2.707	-1.35	-5.7	17.4
1983 12 02	02	44.61	+12 39.0					
1983 12 12	02	39.09	+12 17.9	1.876	2.722	-1.22	-5.3	17.8
1983 12 22	02	36.05	+12 10.0					
1984 01 01	02	35.60	+12 15.5	2.096	2.736	-1.06	-4.7	18.2
1984 01 11	02	37.68	+12 33.3					
1984 01 21	02	42.08	+13 01.8	2.365	2.750	-0.93	-4.0	18.5

1981 EL19		a,e,i = 2.79, 0.15, 7				Elements MPC		7933
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation	Mag.	
1983 09 03	03	30.88	+14 49.1	2.141	2.597	-1.06	-2.6	17.7
1983 09 13	03	35.36	+14 31.2					
1983 09 23	03	37.29	+14 02.2	1.938	2.627	-1.19	-3.0	17.5
1983 10 03	03	36.52	+13 23.0					
1983 10 13	03	33.03	+12 34.8	1.784	2.658	-1.33	-3.6	17.2
1983 10 23	03	27.14	+11 40.3					
1983 11 02	03	19.44	+10 43.3	1.715	2.689	-1.40	-4.2	16.9
1983 11 12	03	10.82	+09 48.8					
1983 11 22	03	02.34	+09 02.2	1.754	2.720	-1.37	-4.3	17.0
1983 12 02	02	54.99	+08 27.8					
1983 12 12	02	49.51	+08 08.2	1.902	2.751	-1.24	-4.0	17.4
1983 12 22	02	46.37	+08 04.4					
1984 01 01	02	45.70	+08 15.3	2.134	2.782	-1.08	-3.4	17.8
1984 01 11	02	47.44	+08 39.0					
1984 01 21	02	51.42	+09 13.3	2.416	2.813	-0.94	-2.9	18.1
1984 01 31	02	57.38	+09 55.4					
1984 02 10	03	05.09	+10 43.3	2.720	2.843	-0.83	-2.4	18.4

1981 EX21		a,e,i = 2.65, 0.20, 12				Elements MPC		7934
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation	Mag.	
1983 09 03	03	25.90	+10 22.9	1.625	2.155	-1.62	-2.8	18.3
1983 09 13	03	33.67	+09 24.5					
1983 09 23	03	38.60	+08 09.5	1.447	2.173	-1.84	-3.7	18.0
1983 10 03	03	40.41	+06 39.9					
1983 10 13	03	38.97	+05 00.1	1.317	2.195	-2.08	-4.8	17.7
1983 10 23	03	34.52	+03 17.2					
1983 11 02	03	27.71	+01 39.9	1.264	2.222	-2.22	-5.4	17.4
1983 11 12	03	19.56	+00 18.3					
1983 11 22	03	11.40	-00 39.4	1.306	2.252	-2.14	-4.9	17.6
1983 12 02	03	04.42	-01 08.8					
1983 12 12	02	59.57	-01 09.6	1.443	2.285	-1.90	-3.9	18.0
1983 12 22	02	57.38	-00 44.9					
1984 01 01	02	57.97	+00 00.4	1.652	2.320	-1.61	-3.1	18.4
1984 01 11	03	01.25	+01 01.2					
1984 01 21	03	06.97	+02 12.5	1.907	2.358	-1.36	-2.6	18.8
1984 01 31	03	14.82	+03 30.3					
1984 02 10	03	24.51	+04 51.3	2.185	2.398	-1.17	-2.2	19.2

6562 P-L		a,e,i = 3.14, 0.17, 2				Elements MPC		7943
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 03	03	51.03	+19 01.4	2.619	2.962	99.8	19.6	18.4
1983 09 13	03	56.39	+19 19.4					
1983 09 23	03	59.71	+19 31.4	2.332	2.929	117.1	17.8	18.1
1983 10 03	04	00.73	+19 37.4					
1983 10 13	03	59.27	+19 37.0	2.086	2.896	136.9	13.6	17.7
1983 10 23	03	55.33	+19 30.3					
1983 11 02	03	49.14	+19 17.4	1.914	2.864	159.2	7.1	17.3
1983 11 12	03	41.25	+18 59.2					
1983 11 22	03	32.53	+18 37.5	1.846	2.833	176.7	1.2	16.9
1983 12 02	03	24.00	+18 15.5					
1983 12 12	03	16.65	+17 56.5	1.892	2.803	152.6	9.3	17.3
1983 12 22	03	11.29	+17 44.1					
1984 01 01	03	08.39	+17 40.5	2.035	2.774	130.3	15.7	17.6
1984 01 11	03	08.16	+17 46.8					
1984 01 21	03	10.56	+18 02.9	2.243	2.747	110.5	19.6	17.9
1984 01 31	03	15.41	+18 27.7					
1984 02 10	03	22.51	+18 59.7	2.482	2.721	93.2	21.2	18.1

(2682) Soromundi		a,e,i = 2.27, 0.17, 5				Elements MPC		7013
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 03		04 04.09	+13 59.6	1.793	2.172	97.7	27.4	18.6
1983 09 13		04 12.23	+13 55.0					
1983 09 23		04 17.62	+13 41.2	1.607	2.211	113.8	24.5	18.3
1983 10 03		04 19.89	+13 19.1					
1983 10 13		04 18.74	+12 50.3	1.449	2.251	133.0	18.9	18.0
1983 10 23		04 14.16	+12 16.9					
1983 11 02		04 06.48	+11 41.9	1.351	2.289	155.1	10.5	17.7
1983 11 12		03 56.50	+11 09.1					
1983 11 22		03 45.50	+10 42.8	1.347	2.327	170.9	3.9	17.5
1983 12 02		03 34.92	+10 27.0					
1983 12 12		03 26.07	+10 24.7	1.450	2.364	151.8	11.3	17.9
1983 12 22		03 19.86	+10 36.9					
1984 01 01		03 16.69	+11 02.6	1.645	2.400	130.1	18.3	18.4
1984 01 11		03 16.61	+11 40.2					
1984 01 21		03 19.42	+12 27.0	1.901	2.433	111.0	22.2	18.8
1984 01 31		03 24.79	+13 20.5					
1984 02 10		03 32.39	+14 18.1	2.186	2.465	94.3	23.5	19.2

(2886) 1965 YG		a,e,i = 2.37, 0.16, 1				Elements MPC		7939
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 03		03 45.04	+18 09.9	1.648	2.094	101.3	28.2	17.8
1983 09 13		03 55.58	+18 37.3					
1983 09 23		04 03.77	+18 55.6	1.419	2.069	116.3	25.8	17.4
1983 10 03		04 09.11	+19 05.0					
1983 10 13		04 11.11	+19 05.7	1.222	2.047	134.2	20.4	17.0
1983 10 23		04 09.49	+18 58.1					
1983 11 02		04 04.28	+18 42.5	1.082	2.028	155.7	11.6	16.5
1983 11 12		03 56.07	+18 20.4					
1983 11 22		03 46.14	+17 54.5	1.026	2.014	178.0	1.0	15.8
1983 12 02		03 36.16	+17 29.6					
1983 12 12		03 27.86	+17 11.1	1.067	2.003	155.0	12.0	16.4
1983 12 22		03 22.55	+17 03.8					
1984 01 01		03 20.85	+17 10.1	1.193	1.997	133.0	21.1	16.9
1984 01 11		03 22.92	+17 30.0					
1984 01 21		03 28.53	+18 01.7	1.375	1.996	114.6	26.6	17.3
1984 01 31		03 37.26	+18 42.3					
1984 02 10		03 48.72	+19 28.7	1.587	2.000	99.3	29.1	17.7

1981 EH4		a,e,i = 2.62, 0.23, 8				Elements MPC		7138
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 09 03		03 50.12	+23 20.2	1.638	2.054	-1.74	-0.8	18.3
1983 09 13		04 01.15	+23 24.2					
1983 09 23		04 09.41	+23 13.8	1.454	2.078	-1.98	-0.4	18.0
1983 10 03		04 14.47	+22 49.1					
1983 10 13		04 15.95	+22 09.6	1.299	2.107	-2.28	-0.9	17.7
1983 10 23		04 13.79	+21 15.8					
1983 11 02		04 08.29	+20 09.0	1.201	2.141	-2.52	-2.1	17.3
1983 11 12		04 00.25	+18 52.6					
1983 11 22		03 51.02	+17 32.7	1.191	2.179	-2.53	-3.4	16.9
1983 12 02		03 42.11	+16 17.1					
1983 12 12		03 34.88	+15 13.3	1.285	2.220	-2.28	-3.7	17.5
1983 12 22		03 30.30	+14 26.6					
1984 01 01		03 28.74	+13 58.6	1.469	2.264	-1.93	-3.0	18.0
1984 01 11		03 30.25	+13 48.6					
1984 01 21		03 34.61	+13 53.9	1.717	2.311	-1.60	-2.2	18.5
1984 01 31		03 41.44	+14 11.0					
1984 02 10		03 50.43	+14 36.5	2.000	2.359	-1.35	-1.4	18.9

1982 HV		a, e, i = 2.34, 0.22, 5			Elements MPC		7374	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 03		04 17.57	+16 23.8	2.078	2.373	94.1	25.1	19.0
1983 09 13		04 24.74	+16 32.7					
1983 09 23		04 29.35	+16 35.0	1.878	2.421	110.6	22.8	18.8
1983 10 03		04 31.08	+16 31.4					
1983 10 13		04 29.65	+16 22.6	1.704	2.468	130.1	18.0	18.5
1983 10 23		04 25.02	+16 09.6					
1983 11 02		04 17.45	+15 53.3	1.589	2.512	152.7	10.4	18.2
1983 11 12		04 07.59	+15 35.1					
1983 11 22		03 56.53	+15 17.3	1.569	2.555	174.7	2.0	17.9
1983 12 02		03 45.57	+15 02.9					
1983 12 12		03 35.94	+14 54.7	1.664	2.595	156.0	8.9	18.4
1983 12 22		03 28.61	+14 55.3					
1984 01 01		03 24.06	+15 05.6	1.860	2.632	133.1	15.8	18.8
1984 01 11		03 22.45	+15 25.6					
1984 01 21		03 23.66	+15 54.4	2.125	2.667	112.9	19.9	19.2
1984 01 31		03 27.42	+16 30.3					
1984 02 10		03 33.43	+17 11.5	2.424	2.699	95.2	21.3	19.6

(2685) Masursky		a, e, i = 2.57, 0.12, 12			Elements MPC		7014	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 03		04 16.34	+19 25.6	2.312	2.584	93.8	22.9	17.9
1983 09 13		04 24.88	+19 04.2					
1983 09 23		04 31.37	+18 31.8	2.037	2.559	109.9	21.6	17.6
1983 10 03		04 35.47	+17 48.3					
1983 10 13		04 36.86	+16 53.7	1.791	2.534	128.4	18.0	17.2
1983 10 23		04 35.35	+15 48.7					
1983 11 02		04 30.95	+14 35.1	1.603	2.509	149.4	11.6	16.8
1983 11 12		04 24.00	+13 16.0					
1983 11 22		04 15.27	+11 56.3	1.507	2.484	169.3	4.2	16.4
1983 12 02		04 05.85	+10 42.4					
1983 12 12		03 56.96	+09 40.4	1.520	2.460	157.7	8.7	16.6
1983 12 22		03 49.76	+08 55.4					
1984 01 01		03 45.01	+08 29.4	1.635	2.436	135.6	16.4	16.9
1984 01 11		03 43.14	+08 22.1					
1984 01 21		03 44.24	+08 31.5	1.819	2.413	115.6	21.6	17.2
1984 01 31		03 48.13	+08 54.1					
1984 02 10		03 54.60	+09 26.7	2.038	2.391	98.4	24.1	17.5

6547 P-L		a, e, i = 2.43, 0.21, 3			Elements MPC		7602	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 03		04 13.86	+20 59.2	1.649	1.994	94.1	30.3	18.8
1983 09 13		04 25.94	+21 43.0					
1983 09 23		04 35.46	+22 20.0	1.470	2.025	108.4	28.0	18.5
1983 10 03		04 41.93	+22 51.1					
1983 10 13		04 44.83	+23 16.9	1.311	2.060	125.8	23.1	18.2
1983 10 23		04 43.86	+23 37.3					
1983 11 02		04 38.98	+23 51.2	1.196	2.099	147.0	14.9	17.8
1983 11 12		04 30.64	+23 57.0					
1983 11 22		04 20.00	+23 53.8	1.160	2.141	171.1	4.1	17.5
1983 12 02		04 08.67	+23 42.4					
1983 12 12		03 58.40	+23 26.3	1.223	2.184	163.1	7.5	17.8
1983 12 22		03 50.65	+23 10.6					
1984 01 01		03 46.20	+22 59.8	1.384	2.230	140.1	16.4	18.3
1984 01 11		03 45.30	+22 56.7					
1984 01 21		03 47.79	+23 02.2	1.617	2.276	120.1	22.0	18.8
1984 01 31		03 53.31	+23 15.3					
1984 02 10		04 01.43	+23 34.4	1.892	2.323	103.0	24.4	19.3

(2739) 1952 UZ1		a,e,i = 2.46, 0.13,			1	Elements MPC		7228
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 03		04 29.46	+22 41.4	2.261	2.480	90.3	24.0	18.7
1983 09 13		04 38.14	+22 59.6					
1983 09 23		04 44.55	+23 11.8	2.035	2.508	106.2	22.6	18.5
1983 10 03		04 48.34	+23 18.6					
1983 10 13		04 49.17	+23 19.7	1.830	2.536	124.8	18.8	18.2
1983 10 23		04 46.84	+23 15.0					
1983 11 02		04 41.41	+23 03.9	1.675	2.562	146.5	12.3	17.8
1983 11 12		04 33.25	+22 45.6					
1983 11 22		04 23.23	+22 20.5	1.607	2.587	170.9	3.5	17.5
1983 12 02		04 12.52	+21 50.4					
1983 12 12		04 02.43	+21 18.6	1.651	2.612	163.9	6.0	17.7
1983 12 22		03 54.14	+20 49.4					
1984 01 01		03 48.41	+20 26.7	1.803	2.635	140.1	13.8	18.1
1984 01 11		03 45.61	+20 12.7					
1984 01 21		03 45.76	+20 08.5	2.035	2.656	119.1	18.9	18.5
1984 01 31		03 48.67	+20 13.4					
1984 02 10		03 54.05	+20 26.0	2.311	2.676	100.7	21.2	18.8
1938 WA		a,e,i = 3.16, 0.14,			1	Elements MPC		6882
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 03		04 26.39	+20 56.6	2.773	2.971	91.3	19.8	18.0
1983 09 13		04 33.83	+21 09.4					
1983 09 23		04 39.44	+21 17.1	2.483	2.947	107.7	18.9	17.8
1983 10 03		04 42.96	+21 20.1					
1983 10 13		04 44.09	+21 18.4	2.219	2.922	126.3	16.0	17.4
1983 10 23		04 42.70	+21 12.0					
1983 11 02		04 38.79	+21 01.1	2.013	2.899	147.4	10.6	17.1
1983 11 12		04 32.61	+20 45.6					
1983 11 22		04 24.75	+20 26.3	1.898	2.877	170.8	3.1	16.7
1983 12 02		04 16.06	+20 04.6					
1983 12 12		04 07.58	+19 42.9	1.894	2.856	164.7	5.2	16.7
1983 12 22		04 00.31	+19 24.1					
1984 01 01		03 55.02	+19 10.9	2.001	2.836	141.4	12.5	17.1
1984 01 11		03 52.19	+19 05.3					
1984 01 21		03 52.01	+19 08.0	2.190	2.817	120.3	17.6	17.4
1984 01 31		03 54.42	+19 18.7					
1984 02 10		03 59.28	+19 36.2	2.427	2.800	101.8	20.2	17.6
1981 CY		a,e,i = 2.27, 0.11,			7	Elements MPC		7780
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 03		04 20.38	+16 45.3	1.877	2.182	93.3	27.5	18.2
1983 09 13		04 31.67	+17 15.7					
1983 09 23		04 40.94	+17 41.1	1.630	2.159	107.7	26.3	17.8
1983 10 03		04 47.77	+18 02.8					
1983 10 13		04 51.62	+18 22.3	1.405	2.137	124.8	22.6	17.4
1983 10 23		04 52.07	+18 40.8					
1983 11 02		04 48.83	+18 59.3	1.224	2.116	145.2	15.5	16.9
1983 11 12		04 41.93	+19 17.8					
1983 11 22		04 32.06	+19 36.0	1.119	2.097	169.1	5.1	16.4
1983 12 02		04 20.50	+19 53.7					
1983 12 12		04 09.01	+20 11.4	1.113	2.080	165.1	7.0	16.5
1983 12 22		03 59.38	+20 31.1					
1984 01 01		03 52.91	+20 55.0	1.204	2.065	141.3	17.3	16.9
1984 01 11		03 50.29	+21 24.9					
1984 01 21		03 51.64	+22 01.4	1.366	2.052	120.8	24.3	17.3
1984 01 31		03 56.69	+22 43.4					
1984 02 10		04 05.07	+23 29.3	1.568	2.042	103.8	28.0	17.7

1977 RE7		a,e,i = 3.11, 0.20, 2				Elements MPC		7607
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 03		04 37.31	+19 53.0	2.683	2.848	88.9	20.7	17.4
1983 09 13		04 44.71	+19 59.9					
1983 09 23		04 50.08	+20 01.6	2.454	2.887	105.3	19.6	17.2
1983 10 03		04 53.16	+19 58.8					
1983 10 13		04 53.73	+19 51.9	2.246	2.925	124.2	16.4	17.0
1983 10 23		04 51.71	+19 41.4					
1983 11 02		04 47.18	+19 27.4	2.092	2.965	145.6	10.9	16.7
1983 11 12		04 40.48	+19 10.6					
1983 11 22		04 32.25	+18 52.0	2.028	3.004	169.0	3.6	16.4
1983 12 02		04 23.37	+18 32.9					
1983 12 12		04 14.78	+18 15.5	2.079	3.043	165.9	4.5	16.6
1983 12 22		04 07.42	+18 02.1					
1984 01 01		04 01.92	+17 54.6	2.242	3.082	142.6	11.2	17.0
1984 01 11		03 58.69	+17 54.0					
1984 01 21		03 57.86	+18 00.8	2.493	3.120	121.4	15.6	17.3
1984 01 31		03 59.35	+18 14.2					
1984 02 10		04 03.00	+18 33.3	2.796	3.159	102.4	17.8	17.6

1982 KM		a,e,i = 2.37, 0.19, 5				Elements MPC		7363
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 03		04 38.58	+22 16.2	2.228	2.417	88.3	24.7	18.2
1983 09 13		04 47.77	+22 19.0					
1983 09 23		04 54.65	+22 14.9	2.013	2.457	104.0	23.3	18.0
1983 10 03		04 58.87	+22 04.2					
1983 10 13		05 00.10	+21 47.3	1.814	2.496	122.5	19.7	17.7
1983 10 23		04 58.13	+21 24.3					
1983 11 02		04 52.99	+20 55.2	1.661	2.533	144.1	13.3	17.4
1983 11 12		04 45.02	+20 20.3					
1983 11 22		04 35.03	+19 41.0	1.593	2.568	168.4	4.4	17.1
1983 12 02		04 24.16	+18 59.6					
1983 12 12		04 13.72	+18 20.0	1.636	2.602	165.7	5.4	17.2
1983 12 22		04 04.92	+17 46.2					
1984 01 01		03 58.57	+17 21.6	1.789	2.633	141.7	13.4	17.7
1984 01 11		03 55.08	+17 07.7					
1984 01 21		03 54.53	+17 04.8	2.025	2.662	120.4	18.6	18.1
1984 01 31		03 56.72	+17 11.6					
1984 02 10		04 01.39	+17 26.5	2.307	2.688	101.8	21.1	18.4

(2847) 1959 CC1		a,e,i = 2.17, 0.12, 2				Elements MPC		7769
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 03		04 36.05	+23 00.9	2.168	2.371	88.7	25.2	17.9
1983 09 13		04 45.82	+23 15.5					
1983 09 23		04 53.39	+23 23.9	1.931	2.385	104.2	24.1	17.7
1983 10 03		04 58.35	+23 26.4					
1983 10 13		05 00.28	+23 23.3	1.709	2.396	122.3	20.6	17.3
1983 10 23		04 58.89	+23 14.2					
1983 11 02		04 54.07	+22 58.7	1.533	2.405	143.7	14.1	17.0
1983 11 12		04 46.03	+22 35.8					
1983 11 22		04 35.55	+22 05.7	1.437	2.412	168.1	4.8	16.6
1983 12 02		04 23.84	+21 29.7					
1983 12 12		04 12.40	+20 51.3	1.450	2.417	166.1	5.6	16.6
1983 12 22		04 02.69	+20 15.4					
1984 01 01		03 55.70	+19 46.7	1.570	2.420	141.7	14.6	17.0
1984 01 11		03 51.95	+19 28.1					
1984 01 21		03 51.54	+19 20.9	1.770	2.420	120.2	20.6	17.4
1984 01 31		03 54.25	+19 24.2					
1984 02 10		03 59.77	+19 36.4	2.013	2.417	101.9	23.5	17.8

1981 EB17		a,e,i = 2.49, 0.05, 3			Elements MPC		7768	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		04 53.74	+26 25.1	2.182	2.609	103.7	21.9	20.0
1983 10 03		04 58.61	+26 48.7					
1983 10 13		05 00.74	+27 08.8	1.938	2.604	121.7	19.0	19.7
1983 10 23		04 59.82	+27 24.5					
1983 11 02		04 55.74	+27 34.6	1.741	2.599	142.5	13.4	19.3
1983 11 12		04 48.63	+27 36.8					
1983 11 22		04 39.15	+27 29.2	1.625	2.593	165.6	5.4	18.9
1983 12 02		04 28.32	+27 11.1					
1983 12 12		04 17.51	+26 44.1	1.618	2.587	167.1	4.9	18.9
1983 12 22		04 08.08	+26 11.9					
1984 01 01		04 01.05	+25 39.8	1.720	2.579	143.8	13.0	19.2
1984 01 11		03 57.05	+25 12.1					
1984 01 21		03 56.25	+24 51.9	1.907	2.571	122.3	18.9	19.6
1984 01 31		03 58.52	+24 40.3					
1984 02 10		04 03.62	+24 36.9	2.143	2.563	103.7	22.0	19.9
1984 02 20		04 11.19	+24 40.4					
1984 03 01		04 20.90	+24 48.9	2.397	2.553	87.5	22.8	20.2

1979 SF11		a,e,i = 2.43, 0.19, 3			Elements MPC		7600	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		04 48.53	+24 54.0	1.518	2.026	105.1	28.6	18.1
1983 10 03		04 57.04	+25 30.8					
1983 10 13		05 02.23	+26 03.0	1.343	2.050	121.5	24.5	17.8
1983 10 23		05 03.65	+26 30.7					
1983 11 02		05 01.06	+26 52.8	1.207	2.078	141.5	17.3	17.4
1983 11 12		04 54.59	+27 06.7					
1983 11 22		04 45.05	+27 10.0	1.141	2.110	164.6	7.2	17.1
1983 12 02		04 33.88	+27 01.3					
1983 12 12		04 22.89	+26 42.1	1.171	2.144	168.3	5.3	17.1
1983 12 22		04 13.82	+26 17.5					
1984 01 01		04 07.85	+25 53.1	1.300	2.181	145.3	14.9	17.6
1984 01 11		04 05.51	+25 33.8					
1984 01 21		04 06.82	+25 22.1	1.507	2.221	124.8	21.3	18.1
1984 01 31		04 11.44	+25 18.4					
1984 02 10		04 18.97	+25 21.5	1.763	2.261	107.3	24.6	18.6
1984 02 20		04 28.95	+25 29.4					
1984 03 01		04 40.95	+25 40.0	2.042	2.302	92.1	25.5	18.9

1979 TM		a,e,i = 2.36, 0.23, 1			Elements MPC		7230	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 03.79	+21 35.4	1.819	2.253	102.0	25.8	17.7
1983 10 03		05 09.54	+21 38.2					
1983 10 13		05 12.12	+21 36.5	1.641	2.305	119.7	22.1	17.4
1983 10 23		05 11.25	+21 31.1					
1983 11 02		05 06.86	+21 21.9	1.502	2.356	140.9	15.4	17.1
1983 11 12		04 59.21	+21 08.7					
1983 11 22		04 49.08	+20 51.5	1.439	2.407	165.1	6.1	16.8
1983 12 02		04 37.68	+20 31.4					
1983 12 12		04 26.47	+20 10.5	1.482	2.456	169.1	4.3	16.8
1983 12 22		04 16.85	+19 52.3					
1984 01 01		04 09.79	+19 39.8	1.634	2.503	144.9	13.1	17.4
1984 01 11		04 05.79	+19 35.2					
1984 01 21		04 04.94	+19 39.0	1.871	2.549	123.4	18.8	17.8
1984 01 31		04 07.04	+19 50.6					
1984 02 10		04 11.78	+20 08.7	2.159	2.592	104.7	21.6	18.2
1984 02 20		04 18.81	+20 31.3					
1984 03 01		04 27.76	+20 56.5	2.467	2.633	88.4	22.1	18.6

(2764) Moeller		a,e,i = 2.25, 0.08, 2				Elements MPC		7361
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		04 56.60	+24 36.6	1.895	2.340	103.3	24.7	18.7
1983 10 03		05 03.36	+24 49.5					
1983 10 13		05 07.29	+24 57.4	1.652	2.323	120.5	21.7	18.3
1983 10 23		05 07.99	+25 00.5					
1983 11 02		05 05.16	+24 57.9	1.450	2.306	140.9	15.7	17.9
1983 11 12		04 58.81	+24 48.3					
1983 11 22		04 49.46	+24 30.3	1.321	2.288	164.5	6.6	17.4
1983 12 02		04 38.20	+24 03.7					
1983 12 12		04 26.57	+23 30.2	1.294	2.270	169.6	4.5	17.3
1983 12 22		04 16.24	+22 54.5					
1984 01 01		04 08.54	+22 22.0	1.373	2.251	145.1	14.5	17.7
1984 01 11		04 04.24	+21 57.1					
1984 01 21		04 03.62	+21 42.6	1.533	2.232	123.5	21.6	18.1
1984 01 31		04 06.50	+21 38.5					
1984 02 10		04 12.59	+21 43.6	1.738	2.213	105.2	25.5	18.4
1984 02 20		04 21.49	+21 55.6					
1984 03 01		04 32.78	+22 11.9	1.962	2.194	89.8	26.9	18.7

(2716) Tuulikki		a,e,i = 2.37, 0.11, 6				Elements MPC		7143
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		04 51.93	+21 18.3	1.648	2.137	104.8	27.0	17.9
1983 10 03		04 59.78	+20 57.4					
1983 10 13		05 04.54	+20 27.3	1.450	2.148	121.6	23.3	17.5
1983 10 23		05 05.85	+19 49.0					
1983 11 02		05 03.53	+19 03.4	1.294	2.162	141.7	16.5	17.1
1983 11 12		04 57.73	+18 12.1					
1983 11 22		04 49.14	+17 17.9	1.209	2.178	164.7	6.9	16.7
1983 12 02		04 38.98	+16 24.6					
1983 12 12		04 28.77	+15 37.4	1.224	2.196	167.5	5.6	16.7
1983 12 22		04 20.08	+15 01.1					
1984 01 01		04 14.00	+14 39.0	1.340	2.215	144.5	15.0	17.2
1984 01 11		04 11.13	+14 31.9					
1984 01 21		04 11.62	+14 38.8	1.534	2.236	123.8	21.5	17.7
1984 01 31		04 15.25	+14 56.8					
1984 02 10		04 21.71	+15 23.1	1.774	2.258	106.2	24.8	18.1
1984 02 20		04 30.61	+15 54.4					
1984 03 01		04 41.57	+16 27.7	2.036	2.280	91.0	25.8	18.4

1976 UF1		a,e,i = 2.24, 0.17, 4				Elements MPC		7469
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 06.23	+20 55.7	1.722	2.159	101.5	27.1	18.0
1983 10 03		05 13.00	+21 10.5					
1983 10 13		05 16.60	+21 22.5	1.539	2.200	118.7	23.4	17.7
1983 10 23		05 16.65	+21 32.4					
1983 11 02		05 12.97	+21 40.5	1.391	2.240	139.4	16.7	17.4
1983 11 12		05 05.68	+21 46.0					
1983 11 22		04 55.47	+21 47.9	1.315	2.279	163.6	7.0	17.0
1983 12 02		04 43.57	+21 45.9					
1983 12 12		04 31.58	+21 40.7	1.341	2.318	170.6	4.0	17.0
1983 12 22		04 21.12	+21 35.0					
1984 01 01		04 13.34	+21 32.0	1.474	2.355	146.0	13.5	17.5
1984 01 11		04 08.89	+21 34.4					
1984 01 21		04 07.91	+21 43.5	1.691	2.390	124.5	19.8	18.0
1984 01 31		04 10.16	+21 59.1					
1984 02 10		04 15.32	+22 20.2	1.959	2.423	106.0	23.0	18.4
1984 02 20		04 22.99	+22 45.1					
1984 03 01		04 32.76	+23 12.0	2.247	2.455	89.9	23.8	18.8

1982 MH		a, e, i = 2.26, 0.07, 4				Elements MPC		7225
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 09 23		04 57.63	+21 48.0	1.678	2.146	-1.60	-4.6	18.9
1983 10 03		05 06.07	+22 13.9					
1983 10 13		05 11.64	+22 37.2	1.456	2.135	-1.92	-4.7	18.5
1983 10 23		05 13.87	+22 59.0					
1983 11 02		05 12.40	+23 19.4	1.272	2.127	-2.29	-5.5	18.1
1983 11 12		05 07.08	+23 37.5					
1983 11 22		04 58.36	+23 51.8	1.156	2.119	-2.58	-6.9	17.6
1983 12 02		04 47.30	+24 00.3					
1983 12 12		04 35.53	+24 02.6	1.135	2.114	-2.58	-8.5	17.4
1983 12 22		04 24.95	+24 00.8					
1984 01 01		04 17.06	+23 58.5	1.215	2.110	-2.29	-8.7	17.9
1984 01 11		04 12.82	+23 59.6					
1984 01 21		04 12.52	+24 06.5	1.374	2.107	-1.93	-7.7	18.3
1984 01 31		04 15.99	+24 19.9					
1984 02 10		04 22.87	+24 38.7	1.581	2.107	-1.65	-6.1	18.7
1984 02 20		04 32.71	+25 01.0					
1984 03 01		04 45.06	+25 24.5	1.810	2.109	-1.46	-4.5	19.1

(2784) 1975 GA		a, e, i = 2.24, 0.17, 7				Elements MPC		7451
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 13.28	+16 36.1	2.038	2.425	100.1	24.0	18.3
1983 10 03		05 18.52	+16 31.0					
1983 10 13		05 20.95	+16 23.3	1.826	2.456	117.8	21.1	18.0
1983 10 23		05 20.29	+16 14.5					
1983 11 02		05 16.39	+16 05.7	1.653	2.486	138.6	15.3	17.7
1983 11 12		05 09.37	+15 58.1					
1983 11 22		04 59.78	+15 52.6	1.555	2.512	161.9	7.0	17.4
1983 12 02		04 48.58	+15 50.3					
1983 12 12		04 37.08	+15 52.3	1.563	2.537	169.2	4.2	17.3
1983 12 22		04 26.64	+16 00.0					
1984 01 01		04 18.35	+16 14.4	1.684	2.559	146.0	12.4	17.8
1984 01 11		04 12.89	+16 35.9					
1984 01 21		04 10.53	+17 04.2	1.894	2.578	124.1	18.4	18.2
1984 01 31		04 11.18	+17 38.4					
1984 02 10		04 14.64	+18 17.0	2.156	2.594	105.1	21.6	18.5
1984 02 20		04 20.57	+18 58.4					
1984 03 01		04 28.64	+19 40.9	2.439	2.607	88.4	22.3	18.8

(2720) Pyotr Pervyj		a, e, i = 2.33, 0.20, 3				Elements MPC		7144
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 08.96	+19 06.5	1.581	2.028	101.0	29.1	18.7
1983 10 03		05 17.56	+19 08.4					
1983 10 13		05 22.94	+19 06.3	1.412	2.070	117.3	25.4	18.4
1983 10 23		05 24.71	+19 02.1					
1983 11 02		05 22.64	+18 56.9	1.275	2.114	137.2	18.6	18.1
1983 11 12		05 16.77	+18 51.5					
1983 11 22		05 07.72	+18 46.5	1.203	2.159	160.6	8.7	17.8
1983 12 02		04 56.66	+18 42.4					
1983 12 12		04 45.17	+18 40.0	1.226	2.206	172.4	3.4	17.6
1983 12 22		04 34.95	+18 41.4					
1984 01 01		04 27.27	+18 48.2	1.354	2.252	148.7	13.1	18.2
1984 01 11		04 22.85	+19 01.7					
1984 01 21		04 21.89	+19 22.0	1.566	2.299	127.2	19.9	18.7
1984 01 31		04 24.21	+19 48.0					
1984 02 10		04 29.48	+20 18.2	1.832	2.345	108.9	23.5	19.2
1984 02 20		04 37.28	+20 50.7					
1984 03 01		04 47.20	+21 23.5	2.124	2.390	93.0	24.5	19.6

(2490) 1976 AG		a,e,i = 2.61, 0.13, 13				Elements MPC		6472
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 00.83	+17 37.2	1.823	2.271	103.0	25.5	16.7
1983 10 03		05 08.93	+16 36.2					
1983 10 13		05 14.30	+15 23.3	1.603	2.267	119.4	22.5	16.3
1983 10 23		05 16.62	+14 00.1					
1983 11 02		05 15.70	+12 29.2	1.425	2.265	138.4	16.9	15.9
1983 11 12		05 11.59	+10 54.5					
1983 11 22		05 04.76	+09 22.0	1.320	2.267	158.2	9.3	15.6
1983 12 02		04 56.11	+07 58.7					
1983 12 12		04 46.91	+06 51.6	1.313	2.272	162.8	7.4	15.5
1983 12 22		04 38.54	+06 06.0					
1984 01 01		04 32.13	+05 43.8	1.406	2.280	144.6	14.5	15.9
1984 01 11		04 28.44	+05 43.9					
1984 01 21		04 27.80	+06 02.6	1.580	2.290	125.0	20.6	16.3
1984 01 31		04 30.17	+06 35.5					
1984 02 10		04 35.35	+07 17.9	1.803	2.304	107.7	24.1	16.6
1984 02 20		04 43.02	+08 05.7					
1984 03 01		04 52.84	+08 55.2	2.050	2.319	92.7	25.3	17.0

1935 QF		a,e,i = 2.65, 0.16, 11				Elements MPC		7468
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 13.84	+14 46.8	2.037	2.424	100.1	24.1	18.0
1983 10 03		05 20.33	+13 55.5					
1983 10 13		05 24.12	+12 57.2	1.837	2.457	117.0	21.2	17.8
1983 10 23		05 24.98	+11 54.1					
1983 11 02		05 22.82	+10 48.9	1.676	2.491	136.4	15.9	17.5
1983 11 12		05 17.75	+09 45.0					
1983 11 22		05 10.28	+08 47.0	1.588	2.526	156.7	8.9	17.2
1983 12 02		05 01.24	+07 59.2					
1983 12 12		04 51.75	+07 25.7	1.601	2.561	163.7	6.2	17.2
1983 12 22		04 42.99	+07 09.0					
1984 01 01		04 35.96	+07 09.5	1.721	2.596	146.1	12.2	17.5
1984 01 11		04 31.32	+07 25.5					
1984 01 21		04 29.38	+07 54.4	1.930	2.631	126.0	17.6	17.9
1984 01 31		04 30.14	+08 32.8					
1984 02 10		04 33.44	+09 17.4	2.195	2.666	107.7	20.6	18.3
1984 02 20		04 39.02	+10 05.3					
1984 03 01		04 46.58	+10 53.9	2.487	2.700	91.5	21.5	18.6

1980 DC		a,e,i = 3.04, 0.10, 9				Elements MPC		7367
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 21.77	+33 02.0	3.003	3.280	97.0	17.7	17.9
1983 10 03		05 26.11	+33 38.6					
1983 10 13		05 28.16	+34 14.6	2.744	3.290	114.8	16.0	17.6
1983 10 23		05 27.67	+34 48.7					
1983 11 02		05 24.54	+35 19.3	2.526	3.299	134.6	12.4	17.4
1983 11 12		05 18.82	+35 43.6					
1983 11 22		05 10.88	+35 58.4	2.384	3.308	155.3	7.2	17.1
1983 12 02		05 01.38	+36 01.1					
1983 12 12		04 51.28	+35 50.3	2.350	3.315	166.4	4.0	17.0
1983 12 22		04 41.66	+35 27.2					
1984 01 01		04 33.46	+34 54.9	2.433	3.321	150.0	8.5	17.2
1984 01 11		04 27.40	+34 17.7					
1984 01 21		04 23.89	+33 40.0	2.618	3.326	129.1	13.3	17.5
1984 01 31		04 23.00	+33 04.9					
1984 02 10		04 24.65	+32 34.7	2.871	3.331	109.4	16.2	17.8
1984 02 20		04 28.64	+32 10.0					
1984 03 01		04 34.68	+31 50.7	3.156	3.334	91.6	17.3	18.0

(2753) 1966 DH		a, e, i = 2.79, 0.04, 7				Elements MPC		7235
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 16.12	+30 39.3	2.383	2.717	98.4	21.4	17.5
1983 10 03		05 22.82	+31 16.2					
1983 10 13		05 27.02	+31 51.8	2.128	2.710	115.4	19.4	17.3
1983 10 23		05 28.38	+32 25.7					
1983 11 02		05 26.64	+32 56.4	1.912	2.704	134.8	15.1	16.9
1983 11 12		05 21.74	+33 21.2					
1983 11 22		05 14.00	+33 36.4	1.766	2.699	156.0	8.5	16.6
1983 12 02		05 04.18	+33 38.8					
1983 12 12		04 53.43	+33 26.4	1.721	2.694	168.8	4.1	16.4
1983 12 22		04 43.19	+33 00.5					
1984 01 01		04 34.69	+32 25.1	1.788	2.690	150.8	10.3	16.6
1984 01 11		04 28.86	+31 45.6					
1984 01 21		04 26.16	+31 07.2	1.950	2.686	129.5	16.4	17.0
1984 01 31		04 26.63	+30 33.4					
1984 02 10		04 30.11	+30 05.7	2.176	2.683	110.3	20.2	17.3
1984 02 20		04 36.27	+29 44.4					
1984 03 01		04 44.77	+29 28.4	2.432	2.680	93.4	21.7	17.6

1981 ET		a, e, i = 2.75, 0.25, 10				Elements MPC		7932
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 09 23		05 27.45	+32 51.6	2.478	2.765	-0.93	-1.0	18.2
1983 10 03		05 33.03	+33 37.8					
1983 10 13		05 35.90	+34 23.8	2.269	2.816	-1.05	-0.6	18.0
1983 10 23		05 35.76	+35 08.5					
1983 11 02		05 32.43	+35 49.9	2.096	2.866	-1.20	-0.7	17.7
1983 11 12		05 25.95	+36 24.2					
1983 11 22		05 16.77	+36 47.2	1.995	2.914	-1.32	-1.4	17.5
1983 12 02		05 05.76	+36 55.1					
1983 12 12		04 54.11	+36 46.2	1.997	2.961	-1.34	-2.4	17.4
1983 12 22		04 43.19	+36 21.9					
1984 01 01		04 34.13	+35 46.6	2.114	3.006	-1.24	-3.1	17.7
1984 01 11		04 27.69	+35 05.7					
1984 01 21		04 24.23	+34 24.6	2.331	3.049	-1.08	-3.2	18.1
1984 01 31		04 23.71	+33 47.0					
1984 02 10		04 25.95	+33 15.1	2.614	3.090	-0.93	-2.7	18.4
1984 02 20		04 30.64	+32 49.3					
1984 03 01		04 37.42	+32 29.3	2.930	3.129	-0.82	-2.1	18.7

1974 MJ		a, e, i = 2.56, 0.20, 7				Elements MPC		7778
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 21.10	+30 38.0	1.953	2.306	97.3	25.6	18.9
1983 10 03		05 29.33	+31 25.2					
1983 10 13		05 34.59	+32 11.3	1.762	2.348	113.8	22.9	18.6
1983 10 23		05 36.45	+32 56.1					
1983 11 02		05 34.61	+33 37.7	1.602	2.391	133.0	17.7	18.3
1983 11 12		05 28.99	+34 12.7					
1983 11 22		05 20.05	+34 36.2	1.506	2.435	154.5	10.1	18.1
1983 12 02		05 08.76	+34 43.6					
1983 12 12		04 56.62	+34 32.8	1.507	2.479	168.0	4.8	17.9
1983 12 22		04 45.33	+34 05.7					
1984 01 01		04 36.28	+33 27.6	1.617	2.522	150.9	10.9	18.3
1984 01 11		04 30.38	+32 45.3					
1984 01 21		04 27.96	+32 04.5	1.821	2.565	129.9	17.1	18.7
1984 01 31		04 28.89	+31 28.9					
1984 02 10		04 32.88	+31 00.0	2.086	2.608	111.0	20.7	19.2
1984 02 20		04 39.52	+30 37.6					
1984 03 01		04 48.37	+30 20.6	2.384	2.649	94.3	21.9	19.5

1979 SX2		a,e,i = 2.37, 0.16, 4				Elements MPC		6939
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation	Mag.	
1983 09 23		05 16.17	+23 28.8	1.748	2.147	-1.48 +0.2	18.0	
1983 10 03		05 25.00	+23 19.0					
1983 10 13		05 30.82	+23 03.0	1.557	2.180	-1.69 +0.6	17.7	
1983 10 23		05 33.22	+22 41.9					
1983 11 02		05 31.97	+22 16.2	1.398	2.214	-1.94 +0.4	17.4	
1983 11 12		05 27.03	+21 46.1					
1983 11 22		05 18.89	+21 11.9	1.302	2.249	-2.16 -0.5	17.0	
1983 12 02		05 08.54	+20 34.8					
1983 12 12		04 57.40	+19 57.0	1.302	2.285	-2.17 -1.6	16.7	
1983 12 22		04 47.11	+19 22.3					
1984 01 01		04 38.97	+18 54.3	1.409	2.321	-1.95 -2.1	17.3	
1984 01 11		04 33.83	+18 35.8					
1984 01 21		04 32.00	+18 27.6	1.606	2.357	-1.65 -1.9	17.8	
1984 01 31		04 33.40	+18 29.0					
1984 02 10		04 37.75	+18 38.3	1.860	2.392	-1.39 -1.3	18.3	
1984 02 20		04 44.68	+18 53.0					
1984 03 01		04 53.79	+19 10.7	2.143	2.427	-1.19 -0.7	18.6	

(2738) 1940 EC		a,e,i = 2.72, 0.11, 1				Elements MPC		7226
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong. Phase	Mag.	
1983 09 23		05 21.45	+24 06.5	2.604	2.914	97.7 20.0	18.1	
1983 10 03		05 26.96	+24 12.6					
1983 10 13		05 30.21	+24 16.4	2.325	2.897	115.4 18.1	17.8	
1983 10 23		05 30.91	+24 18.2					
1983 11 02		05 28.90	+24 17.6	2.084	2.878	135.6 14.0	17.4	
1983 11 12		05 24.12	+24 14.1					
1983 11 22		05 16.88	+24 06.8	1.916	2.858	158.4 7.3	17.0	
1983 12 02		05 07.78	+23 55.0					
1983 12 12		04 57.77	+23 38.8	1.854	2.837	176.7 1.1	16.6	
1983 12 22		04 48.02	+23 19.7					
1984 01 01		04 39.61	+23 00.1	1.908	2.816	152.3 9.4	17.1	
1984 01 11		04 33.39	+22 42.9					
1984 01 21		04 29.88	+22 30.5	2.062	2.794	129.6 15.7	17.4	
1984 01 31		04 29.21	+22 24.1					
1984 02 10		04 31.34	+22 24.0	2.279	2.771	109.6 19.6	17.7	
1984 02 20		04 36.06	+22 29.2					
1984 03 01		04 43.06	+22 38.6	2.526	2.748	92.2 21.1	17.9	

1979 SD7		a,e,i = 2.36, 0.14, 4				Elements MPC		7141
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong. Phase	Mag.	
1983 09 23		05 07.14	+26 04.2	1.687	2.118	100.8 27.7	17.9	
1983 10 03		05 17.94	+26 41.7					
1983 10 13		05 26.17	+27 17.0	1.455	2.095	116.1 25.3	17.5	
1983 10 23		05 31.29	+27 51.0					
1983 11 02		05 32.80	+28 23.6	1.256	2.074	134.3 20.0	17.0	
1983 11 12		05 30.31	+28 53.4					
1983 11 22		05 23.92	+29 17.3	1.115	2.057	155.8 11.3	16.6	
1983 12 02		05 14.32	+29 31.0					
1983 12 12		05 02.95	+29 31.2	1.062	2.043	173.2 3.3	16.2	
1983 12 22		04 51.82	+29 18.0					
1984 01 01		04 42.82	+28 55.5	1.107	2.032	153.0 12.7	16.6	
1984 01 11		04 37.31	+28 29.7					
1984 01 21		04 35.94	+28 06.2	1.235	2.026	131.5 21.3	17.0	
1984 01 31		04 38.68	+27 48.0					
1984 02 10		04 45.21	+27 35.8	1.419	2.024	113.4 26.6	17.4	
1984 02 20		04 55.03	+27 28.4					
1984 03 01		05 07.60	+27 23.5	1.631	2.026	98.2 29.0	17.8	

(2798) 2009 P-L		a,e,i = 2.42, 0.06, 5			Elements MPC		7458	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 21.16	+21 24.6	1.916	2.283	98.0	25.8	17.8
1983 10 03		05 30.02	+21 05.4					
1983 10 13		05 36.23	+20 40.2	1.692	2.289	114.2	23.4	17.5
1983 10 23		05 39.42	+20 09.9					
1983 11 02		05 39.30	+19 35.6	1.498	2.296	133.3	18.3	17.1
1983 11 12		05 35.73	+18 58.4					
1983 11 22		05 29.00	+18 19.6	1.368	2.303	155.6	10.2	16.7
1983 12 02		05 19.83	+17 41.1					
1983 12 12		05 09.41	+17 05.3	1.331	2.312	174.1	2.5	16.4
1983 12 22		04 59.24	+16 35.4					
1984 01 01		04 50.70	+16 14.1	1.401	2.322	153.3	11.0	16.8
1984 01 11		04 44.81	+16 03.6					
1984 01 21		04 42.10	+16 03.9	1.563	2.333	131.3	18.5	17.2
1984 01 31		04 42.65	+16 14.0					
1984 02 10		04 46.29	+16 31.8	1.786	2.344	112.2	22.9	17.6
1984 02 20		04 52.69	+16 54.6					
1984 03 01		05 01.49	+17 20.0	2.039	2.356	95.8	24.7	18.0

(2754) 1966 PD		a,e,i = 2.23, 0.23, 6			Elements MPC		7236	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 15.69	+28 46.3	1.345	1.795	98.6	33.6	16.7
1983 10 03		05 29.01	+28 56.1					
1983 10 13		05 38.84	+28 57.5	1.196	1.834	113.2	30.0	16.4
1983 10 23		05 44.61	+28 51.5					
1983 11 02		05 45.85	+28 38.5	1.068	1.879	131.4	23.3	16.0
1983 11 12		05 42.33	+28 17.0					
1983 11 22		05 34.47	+27 45.0	0.990	1.927	153.9	13.0	15.7
1983 12 02		05 23.44	+27 01.1					
1983 12 12		05 11.08	+26 06.5	0.995	1.978	176.9	1.6	15.3
1983 12 22		04 59.61	+25 06.3					
1984 01 01		04 50.74	+24 07.8	1.098	2.032	154.9	11.8	16.0
1984 01 11		04 45.52	+23 17.5					
1984 01 21		04 44.24	+22 38.9	1.288	2.086	132.9	20.2	16.6
1984 01 31		04 46.64	+22 12.3					
1984 02 10		04 52.30	+21 56.1	1.537	2.141	114.4	24.8	17.2
1984 02 20		05 00.69	+21 47.5					
1984 03 01		05 11.31	+21 43.6	1.817	2.196	98.6	26.5	17.6

1978 SP2		a,e,i = 2.56, 0.14, 15			Elements MPC		7941	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 33.67	+09 47.0	2.624	2.897	95.5	20.2	18.4
1983 10 03		05 38.78	+08 46.1					
1983 10 13		05 41.72	+07 39.7	2.375	2.906	112.4	18.5	18.1
1983 10 23		05 42.28	+06 29.8					
1983 11 02		05 40.33	+05 18.9	2.163	2.912	131.0	14.9	17.8
1983 11 12		05 35.89	+04 10.7					
1983 11 22		05 29.23	+03 09.5	2.021	2.917	149.7	9.8	17.6
1983 12 02		05 20.88	+02 19.9					
1983 12 12		05 11.65	+01 46.0	1.980	2.920	158.8	7.0	17.5
1983 12 22		05 02.50	+01 30.4					
1984 01 01		04 54.36	+01 33.5	2.050	2.920	146.4	10.7	17.6
1984 01 11		04 47.98	+01 54.1					
1984 01 21		04 43.86	+02 29.0	2.215	2.919	127.4	15.5	17.9
1984 01 31		04 42.19	+03 14.6					
1984 02 10		04 42.98	+04 07.6	2.444	2.916	108.8	18.7	18.2
1984 02 20		04 46.09	+05 04.5					
1984 03 01		04 51.30	+06 02.6	2.703	2.911	92.0	19.9	18.4

1981 EO18		a,e,i = 2.38, 0.06, 2				Elements MPC		7932
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 09 23		05 22.32	+26 00.9	1.875	2.237	-1.46	-1.2	18.7
1983 10 03		05 32.16	+26 20.5					
1983 10 13		05 39.38	+26 37.2	1.647	2.237	-1.71	-0.6	18.4
1983 10 23		05 43.52	+26 52.0					
1983 11 02		05 44.18	+27 04.8	1.449	2.238	-2.02	-0.5	18.0
1983 11 12		05 41.10	+27 14.8					
1983 11 22		05 34.42	+27 19.8	1.310	2.240	-2.30	-1.3	17.6
1983 12 02		05 24.83	+27 17.2					
1983 12 12		05 13.57	+27 05.2	1.261	2.244	-2.40	-2.9	17.1
1983 12 22		05 02.38	+26 44.5					
1984 01 01		04 52.88	+26 18.6	1.317	2.249	-2.21	-3.9	17.6
1984 01 11		04 46.32	+25 52.2					
1984 01 21		04 43.34	+25 29.5	1.466	2.255	-1.89	-3.7	18.0
1984 01 31		04 44.00	+25 12.9					
1984 02 10		04 48.09	+25 02.9	1.677	2.262	-1.60	-2.9	18.4
1984 02 20		04 55.22	+24 58.3					
1984 03 01		05 04.94	+24 57.4	1.920	2.271	-1.38	-1.8	18.8

(2714) Matti		a,e,i = 2.24, 0.21, 6				Elements MPC		7142
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 39.11	+16 52.9	2.307	2.578	93.9	22.8	18.9
1983 10 03		05 45.27	+16 37.8					
1983 10 13		05 48.97	+16 20.4	2.074	2.605	111.1	20.9	18.6
1983 10 23		05 49.92	+16 02.3					
1983 11 02		05 47.89	+15 44.8	1.869	2.629	131.0	16.5	18.3
1983 11 12		05 42.82	+15 29.2					
1983 11 22		05 34.98	+15 16.9	1.728	2.650	153.6	9.6	18.0
1983 12 02		05 24.98	+15 08.6					
1983 12 12		05 13.81	+15 05.5	1.688	2.667	172.1	2.9	17.7
1983 12 22		05 02.75	+15 08.5					
1984 01 01		04 52.97	+15 18.0	1.765	2.681	153.5	9.4	18.1
1984 01 11		04 45.43	+15 34.4					
1984 01 21		04 40.67	+15 57.4	1.943	2.692	130.9	16.0	18.5
1984 01 31		04 38.86	+16 26.1					
1984 02 10		04 39.93	+16 59.2	2.188	2.700	110.8	20.0	18.8
1984 02 20		04 43.63	+17 35.3					
1984 03 01		04 49.66	+18 12.6	2.462	2.704	93.1	21.5	19.1

4805 P-L		a,e,i = 2.39, 0.16, 2				Elements MPC		7943
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 40.87	+25 07.3	2.477	2.725	93.3	21.6	20.6
1983 10 03		05 48.01	+25 20.1					
1983 10 13		05 52.91	+25 32.3	2.197	2.709	110.2	20.2	20.3
1983 10 23		05 55.21	+25 44.5					
1983 11 02		05 54.60	+25 56.9	1.945	2.690	129.7	16.5	20.0
1983 11 12		05 50.86	+26 08.7					
1983 11 22		05 44.08	+26 18.4	1.756	2.669	152.1	10.0	19.6
1983 12 02		05 34.69	+26 23.7					
1983 12 12		05 23.57	+26 22.7	1.663	2.646	175.7	1.6	19.1
1983 12 22		05 12.04	+26 14.9					
1984 01 01		05 01.45	+26 01.5	1.685	2.620	157.4	8.3	19.4
1984 01 11		04 53.01	+25 45.6					
1984 01 21		04 47.51	+25 30.7	1.812	2.593	133.9	15.9	19.7
1984 01 31		04 45.24	+25 19.4					
1984 02 10		04 46.22	+25 12.9	2.008	2.564	113.3	20.7	20.0
1984 02 20		04 50.23	+25 11.4					
1984 03 01		04 56.92	+25 13.8	2.237	2.534	95.6	22.9	20.3

(2717) Tellervo		a,e,i = 2.21, 0.22, 3				Elements MPC		7143
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 41.78	+19 42.3	1.801	2.111	93.2	28.3	17.1
1983 10 03		05 51.26	+19 27.2					
1983 10 13		05 57.88	+19 08.7	1.619	2.162	109.1	25.9	16.8
1983 10 23		06 01.23	+18 48.8					
1983 11 02		06 01.01	+18 29.1	1.458	2.213	128.1	20.7	16.5
1983 11 12		05 57.05	+18 11.0					
1983 11 22		05 49.59	+17 55.3	1.349	2.262	150.7	12.4	16.2
1983 12 02		05 39.33	+17 42.7					
1983 12 12		05 27.50	+17 33.6	1.330	2.311	173.4	2.8	15.9
1983 12 22		05 15.68	+17 28.9					
1984 01 01		05 05.39	+17 29.7	1.420	2.357	157.1	9.4	16.3
1984 01 11		04 57.73	+17 36.8					
1984 01 21		04 53.33	+17 50.4	1.608	2.401	134.3	17.1	16.8
1984 01 31		04 52.25	+18 09.9					
1984 02 10		04 54.33	+18 33.9	1.864	2.442	114.4	21.6	17.3
1984 02 20		04 59.22	+19 00.7					
1984 03 01		05 06.52	+19 28.4	2.153	2.481	97.2	23.3	17.7

1982 FT		a,e,i = 1.77, 0.28, 20				Elements MPC		7461
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 09 23		05 48.69	+45 24.8	1.981	2.236	-1.54	+0.4	19.8
1983 10 03		06 01.83	+47 11.1					
1983 10 13		06 12.54	+49 04.4	1.734	2.209	-1.94	+2.1	19.5
1983 10 23		06 20.00	+51 05.6					
1983 11 02		06 23.13	+53 13.7	1.510	2.177	-2.55	+3.1	19.1
1983 11 12		06 20.60	+55 24.1					
1983 11 22		06 11.14	+57 26.2	1.330	2.137	-3.35	+1.6	18.7
1983 12 02		05 54.11	+59 03.2					
1983 12 12		05 30.67	+59 54.1	1.221	2.092	-3.83	-3.9	18.4
1983 12 22		05 04.66	+59 43.0					
1984 01 01		04 41.21	+58 29.1	1.196	2.041	-3.33	-9.6	18.4
1984 01 11		04 24.36	+56 27.6					
1984 01 21		04 15.55	+54 01.1	1.250	1.984	-2.51	-10.4	18.5
1984 01 31		04 14.24	+51 28.8					
1984 02 10		04 19.24	+49 02.5	1.356	1.922	-1.96	-7.7	18.7
1984 02 20		04 29.23	+46 47.5					
1984 03 01		04 43.11	+44 43.8	1.487	1.855	-1.67	-4.0	18.9

1978 PQ2		a,e,i = 2.67, 0.22, 2				Elements MPC		5845
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 40.55	+21 45.6	2.107	2.388	93.5	24.8	18.6
1983 10 03		05 48.97	+21 38.3					
1983 10 13		05 54.78	+21 28.3	1.907	2.434	109.8	22.7	18.4
1983 10 23		05 57.66	+21 17.0					
1983 11 02		05 57.39	+21 05.3	1.732	2.480	129.1	18.1	18.1
1983 11 12		05 53.88	+20 53.6					
1983 11 22		05 47.37	+20 42.1	1.615	2.527	151.5	10.8	17.8
1983 12 02		05 38.49	+20 30.7					
1983 12 12		05 28.26	+20 19.3	1.591	2.574	175.3	1.8	17.4
1983 12 22		05 17.98	+20 08.9					
1984 01 01		05 08.90	+20 00.8	1.681	2.621	158.5	7.9	17.9
1984 01 11		05 02.00	+19 56.4					
1984 01 21		04 57.85	+19 57.0	1.873	2.667	135.7	14.9	18.3
1984 01 31		04 56.61	+20 02.6					
1984 02 10		04 58.19	+20 12.9	2.138	2.713	115.5	19.2	18.8
1984 02 20		05 02.35	+20 26.6					
1984 03 01		05 08.74	+20 42.4	2.441	2.758	97.9	20.9	19.1

(2755) Avicenna		a,e,i = 2.85, 0.26, 5			Elements MPC		7236	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23	05	31.31	+22 54.1	1.866	2.203	95.5	27.0	17.2
1983 10 03	05	41.71	+22 39.0					
1983 10 13	05	49.38	+22 18.6	1.675	2.236	111.1	24.6	16.9
1983 10 23	05	53.96	+21 54.2					
1983 11 02	05	55.17	+21 27.2	1.510	2.275	129.6	19.6	16.6
1983 11 12	05	52.88	+20 58.5					
1983 11 22	05	47.35	+20 28.8	1.401	2.317	151.5	11.7	16.3
1983 12 02	05	39.22	+19 59.0					
1983 12 12	05	29.62	+19 30.3	1.381	2.363	174.6	2.3	16.0
1983 12 22	05	19.96	+19 04.7					
1984 01 01	05	11.57	+18 44.3	1.468	2.411	158.8	8.5	16.4
1984 01 11	05	05.51	+18 30.9					
1984 01 21	05	02.34	+18 25.3	1.653	2.461	136.5	16.0	16.9
1984 01 31	05	02.20	+18 27.1					
1984 02 10	05	04.96	+18 35.0	1.908	2.513	116.9	20.5	17.4
1984 02 20	05	10.32	+18 47.1					
1984 03 01	05	17.92	+19 01.4	2.203	2.566	99.9	22.4	17.8

(2777) 1979 SY11		a,e,i = 2.37, 0.09, 5			Elements MPC		7370	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23	05	34.15	+25 24.9	1.975	2.288	94.8	25.9	17.9
1983 10 03	05	44.73	+25 55.1					
1983 10 13	05	53.02	+26 25.3	1.723	2.269	110.2	24.4	17.5
1983 10 23	05	58.58	+26 56.9					
1983 11 02	06	00.92	+27 30.7	1.498	2.251	128.2	20.3	17.1
1983 11 12	05	59.63	+28 06.3					
1983 11 22	05	54.59	+28 41.9	1.327	2.234	149.4	13.0	16.7
1983 12 02	05	46.10	+29 13.5					
1983 12 12	05	35.09	+29 36.5	1.240	2.218	171.6	3.7	16.2
1983 12 22	05	23.16	+29 47.7					
1984 01 01	05	12.13	+29 47.0	1.257	2.204	159.2	9.1	16.4
1984 01 11	05	03.63	+29 37.6					
1984 01 21	04	58.73	+29 24.4	1.370	2.191	136.5	18.0	16.8
1984 01 31	04	57.78	+29 11.4					
1984 02 10	05	00.72	+29 00.9	1.549	2.180	116.9	23.8	17.2
1984 02 20	05	07.18	+28 53.5					
1984 03 01	05	16.68	+28 48.0	1.763	2.171	100.3	26.7	17.5

(2757) 1977 VN		a,e,i = 3.16, 0.20, 1			Elements MPC		7237	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23	05	39.36	+23 57.9	2.251	2.522	93.7	23.4	16.3
1983 10 03	05	49.00	+24 05.0					
1983 10 13	05	56.42	+24 10.1	2.009	2.523	109.4	21.9	16.0
1983 10 23	06	01.28	+24 14.1					
1983 11 02	06	03.29	+24 18.1	1.795	2.528	127.8	18.1	15.7
1983 11 12	06	02.22	+24 22.2					
1983 11 22	05	58.16	+24 25.8	1.637	2.536	149.0	11.6	15.4
1983 12 02	05	51.47	+24 28.0					
1983 12 12	05	42.96	+24 27.4	1.568	2.548	172.7	2.8	15.0
1983 12 22	05	33.81	+24 23.5					
1984 01 01	05	25.29	+24 16.8	1.607	2.563	162.8	6.5	15.2
1984 01 11	05	18.54	+24 09.1					
1984 01 21	05	14.36	+24 02.4	1.750	2.582	139.9	14.2	15.6
1984 01 31	05	13.10	+23 58.1					
1984 02 10	05	14.80	+23 56.8	1.969	2.604	119.7	19.2	16.0
1984 02 20	05	19.27	+23 58.3					
1984 03 01	05	26.21	+24 01.4	2.234	2.628	102.2	21.6	16.3

1982 UM		a,e,i = 3.94, 0.18, 4				Elements MPC		7776
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation	Mag.	
1983 09 23	05	58.28	+25 47.0	3.610	3.735	-0.58 -0.6	18.0	
1983 10 03	06	03.20	+25 58.7					
1983 10 13	06	06.34	+26 11.0	3.349	3.766	-0.63 -0.4	17.8	
1983 10 23	06	07.54	+26 23.9					
1983 11 02	06	06.68	+26 37.3	3.117	3.798	-0.69 -0.4	17.6	
1983 11 12	06	03.76	+26 50.8					
1983 11 22	05	58.93	+27 03.2	2.950	3.829	-0.74 -0.6	17.4	
1983 12 02	05	52.52	+27 13.3					
1983 12 12	05	45.04	+27 19.9	2.884	3.860	-0.78 -0.9	17.1	
1983 12 22	05	37.19	+27 22.5					
1984 01 01	05	29.68	+27 21.1	2.938	3.891	-0.76 -1.2	17.3	
1984 01 11	05	23.17	+27 16.6					
1984 01 21	05	18.21	+27 10.4	3.109	3.922	-0.72 -1.4	17.6	
1984 01 31	05	15.09	+27 03.9					
1984 02 10	05	13.97	+26 58.2	3.370	3.952	-0.65 -1.3	17.9	
1984 02 20	05	14.84	+26 53.9					
1984 03 01	05	17.57	+26 51.3	3.683	3.983	-0.59 -1.1	18.2	

(2475) Semenov		a,e,i = 3.04, 0.11, 9				Elements MPC		6465
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23	05	50.30	+17 33.5	2.551	2.762	91.3	21.3	17.0
1983 10 03	05	57.99	+16 56.4					
1983 10 13	06	03.55	+16 15.1	2.305	2.775	107.6	20.0	16.8
1983 10 23	06	06.75	+15 30.9					
1983 11 02	06	07.38	+14 45.3	2.086	2.790	126.2	16.7	16.5
1983 11 12	06	05.36	+14 00.3					
1983 11 22	06	00.79	+13 17.8	1.925	2.805	147.0	11.1	16.2
1983 12 02	05	54.08	+12 40.0					
1983 12 12	05	45.88	+12 09.4	1.855	2.822	166.5	4.7	16.0
1983 12 22	05	37.16	+11 47.8					
1984 01 01	05	28.91	+11 36.4	1.898	2.840	159.5	7.0	16.1
1984 01 11	05	22.07	+11 35.6					
1984 01 21	05	17.31	+11 44.5	2.047	2.858	138.4	13.2	16.4
1984 01 31	05	14.97	+12 01.8					
1984 02 10	05	15.18	+12 25.2	2.274	2.877	118.4	17.6	16.8
1984 02 20	05	17.82	+12 52.7					
1984 03 01	05	22.69	+13 22.0	2.548	2.897	100.5	19.7	17.1

(2504) Gaviola		a,e,i = 2.76, 0.09, 4				Elements MPC		6521
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23	05	51.19	+27 07.6	2.580	2.783	90.9	21.1	18.3
1983 10 03	05	59.57	+27 26.1					
1983 10 13	06	05.88	+27 44.8	2.299	2.765	107.3	20.2	18.0
1983 10 23	06	09.79	+28 04.4					
1983 11 02	06	10.98	+28 25.3	2.044	2.746	125.9	17.0	17.6
1983 11 12	06	09.19	+28 46.8					
1983 11 22	06	04.39	+29 07.2	1.844	2.728	147.2	11.3	17.3
1983 12 02	05	56.85	+29 23.9					
1983 12 12	05	47.25	+29 33.7	1.735	2.710	169.7	3.7	16.9
1983 12 22	05	36.71	+29 34.7					
1984 01 01	05	26.53	+29 26.6	1.738	2.691	162.3	6.4	17.0
1984 01 11	05	17.97	+29 11.5					
1984 01 21	05	11.98	+28 52.7	1.848	2.674	139.4	13.8	17.3
1984 01 31	05	09.01	+28 33.6					
1984 02 10	05	09.22	+28 16.5	2.038	2.656	118.7	19.0	17.6
1984 02 20	05	12.46	+28 02.5					
1984 03 01	05	18.42	+27 51.3	2.270	2.639	100.6	21.7	17.9

(2498) Tsesevich		a,e,i = 2.92, 0.08, 1				Elements MPC		6515
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 56.05	+24 45.0	2.748	2.923	89.8	20.1	18.1
1983 10 03		06 03.27	+24 48.8					
1983 10 13		06 08.40	+24 52.0	2.492	2.939	106.7	19.0	17.9
1983 10 23		06 11.15	+24 55.4					
1983 11 02		06 11.32	+24 59.3	2.261	2.955	125.9	15.8	17.6
1983 11 12		06 08.77	+25 03.4					
1983 11 22		06 03.59	+25 07.0	2.088	2.971	147.8	10.2	17.3
1983 12 02		05 56.14	+25 08.6					
1983 12 12		05 47.11	+25 07.1	2.009	2.987	171.7	2.7	16.9
1983 12 22		05 37.48	+25 01.8					
1984 01 01		05 28.30	+24 53.0	2.046	3.002	163.5	5.4	17.1
1984 01 11		05 20.57	+24 42.3					
1984 01 21		05 14.99	+24 31.6	2.195	3.016	140.1	12.1	17.5
1984 01 31		05 11.96	+24 22.7					
1984 02 10		05 11.57	+24 16.5	2.427	3.030	119.0	16.5	17.8
1984 02 20		05 13.73	+24 13.4					
1984 03 01		05 18.21	+24 12.8	2.706	3.044	100.3	18.7	18.1

1977 TA1		a,e,i = 3.03, 0.02, 10				Elements MPC		7607
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 55.65	+17 43.4	2.859	3.030	90.0	19.3	18.1
1983 10 03		06 02.28	+17 09.0					
1983 10 13		06 06.95	+16 31.1	2.591	3.034	106.8	18.3	17.9
1983 10 23		06 09.44	+15 50.9					
1983 11 02		06 09.56	+15 09.5	2.350	3.039	125.8	15.4	17.6
1983 11 12		06 07.24	+14 28.5					
1983 11 22		06 02.58	+13 49.5	2.169	3.043	146.7	10.3	17.3
1983 12 02		05 55.92	+13 14.2					
1983 12 12		05 47.85	+12 44.6	2.081	3.047	166.7	4.3	17.1
1983 12 22		05 39.21	+12 22.4					
1984 01 01		05 30.93	+12 08.6	2.108	3.052	160.2	6.3	17.2
1984 01 11		05 23.85	+12 04.0					
1984 01 21		05 18.65	+12 08.1	2.246	3.056	138.8	12.2	17.5
1984 01 31		05 15.69	+12 20.0					
1984 02 10		05 15.14	+12 38.0	2.465	3.060	118.4	16.5	17.8
1984 02 20		05 16.94	+13 00.3					
1984 03 01		05 20.92	+13 25.1	2.731	3.064	100.1	18.6	18.0

1981 EV20		a,e,i = 2.34, 0.05, 7				Elements MPC		7933
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 09 23		05 46.01	+30 43.3	1.977	2.247	-1.45	+0.0	18.8
1983 10 03		05 58.09	+31 17.2					
1983 10 13		06 07.85	+31 50.5	1.740	2.241	-1.69	+1.2	18.5
1983 10 23		06 14.81	+32 24.6					
1983 11 02		06 18.46	+32 59.8	1.524	2.236	-2.01	+2.0	18.2
1983 11 12		06 18.31	+33 35.0					
1983 11 22		06 14.14	+34 07.4	1.355	2.232	-2.37	+1.8	17.7
1983 12 02		06 06.12	+34 31.6					
1983 12 12		05 55.10	+34 41.5	1.264	2.230	-2.60	+0.1	17.4
1983 12 22		05 42.66	+34 32.7					
1984 01 01		05 30.72	+34 05.1	1.275	2.228	-2.51	-2.0	17.4
1984 01 11		05 21.09	+33 23.1					
1984 01 21		05 15.00	+32 34.0	1.384	2.228	-2.17	-2.7	17.8
1984 01 31		05 12.89	+31 44.2					
1984 02 10		05 14.71	+30 58.1	1.566	2.228	-1.82	-2.1	18.2
1984 02 20		05 20.10	+30 17.1					
1984 03 01		05 28.53	+29 40.9	1.789	2.230	-1.55	-1.0	18.6

(2771) 1978 SP7		a,e,i = 2.68, 0.23, 14				Elements MPC		7364
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		06 04.35	+13 28.9	2.568	2.723	87.9	21.6	18.2
1983 10 03		06 11.40	+12 30.0					
1983 10 13		06 16.26	+11 26.6	2.349	2.769	104.2	20.4	18.0
1983 10 23		06 18.71	+10 20.6					
1983 11 02		06 18.57	+09 14.0	2.151	2.814	122.6	17.3	17.8
1983 11 12		06 15.77	+08 09.4					
1983 11 22		06 10.44	+07 10.2	2.008	2.857	142.7	12.1	17.6
1983 12 02		06 02.97	+06 19.8					
1983 12 12		05 54.02	+05 41.7	1.954	2.899	159.9	6.7	17.4
1983 12 22		05 44.53	+05 18.3					
1984 01 01		05 35.47	+05 10.5	2.012	2.939	156.2	7.8	17.5
1984 01 11		05 27.74	+05 18.0					
1984 01 21		05 22.00	+05 38.5	2.178	2.977	137.3	12.9	17.9
1984 01 31		05 18.60	+06 09.0					
1984 02 10		05 17.66	+06 46.5	2.424	3.013	117.8	16.8	18.2
1984 02 20		05 19.09	+07 27.9					
1984 03 01		05 22.68	+08 10.6	2.715	3.047	100.0	18.7	18.5

1982 QR		a,e,i = 3.20, 0.08, 21				Elements MPC		7840
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		06 03.97	+38 52.0	2.793	2.938	88.2	20.0	18.0
1983 10 03		06 12.84	+39 01.4					
1983 10 13		06 19.37	+39 09.6	2.534	2.942	104.2	19.2	17.8
1983 10 23		06 23.21	+39 16.1					
1983 11 02		06 24.08	+39 20.0	2.296	2.947	122.2	16.6	17.5
1983 11 12		06 21.76	+39 18.8					
1983 11 22		06 16.31	+39 09.3	2.108	2.953	142.4	11.8	17.2
1983 12 02		06 08.10	+38 47.3					
1983 12 12		05 57.92	+38 09.6	2.008	2.959	161.9	5.9	17.0
1983 12 22		05 46.96	+37 14.7					
1984 01 01		05 36.51	+36 04.7	2.020	2.967	161.1	6.2	17.0
1984 01 11		05 27.73	+34 44.2					
1984 01 21		05 21.44	+33 19.6	2.146	2.976	141.0	12.0	17.3
1984 01 31		05 18.01	+31 56.4					
1984 02 10		05 17.50	+30 38.7	2.361	2.986	120.5	16.5	17.6
1984 02 20		05 19.71	+29 28.6					
1984 03 01		05 24.33	+28 26.1	2.630	2.996	102.0	18.9	17.9

1955 RZ		a,e,i = 2.74, 0.01, 10				Elements MPC		7768
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		06 02.90	+30 39.3	2.606	2.765	88.3	21.3	18.3
1983 10 03		06 11.82	+30 43.8					
1983 10 13		06 18.57	+30 47.0	2.342	2.766	104.5	20.4	18.0
1983 10 23		06 22.81	+30 49.6					
1983 11 02		06 24.25	+30 51.5	2.098	2.767	123.0	17.5	17.7
1983 11 12		06 22.62	+30 51.7					
1983 11 22		06 17.91	+30 48.3	1.906	2.767	144.1	12.1	17.4
1983 12 02		06 10.40	+30 38.9					
1983 12 12		06 00.76	+30 20.6	1.800	2.768	166.8	4.7	17.0
1983 12 22		05 50.10	+29 52.3					
1984 01 01		05 39.68	+29 14.7	1.806	2.768	165.1	5.2	17.1
1984 01 11		05 30.73	+28 31.0					
1984 01 21		05 24.20	+27 45.2	1.924	2.768	142.2	12.6	17.4
1984 01 31		05 20.55	+27 01.2					
1984 02 10		05 19.91	+26 21.5	2.128	2.768	121.0	17.8	17.8
1984 02 20		05 22.16	+25 47.2					
1984 03 01		05 26.99	+25 18.1	2.380	2.768	102.4	20.5	18.1

1964 TH1		a,e,i = 2.40, 0.15, 2				Elements MPC		7372
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 41.44	+22 27.3	1.890	2.189	93.2	27.2	17.7
1983 10 03		05 53.83	+22 20.2					
1983 10 13		06 04.13	+22 08.4	1.638	2.161	107.7	26.1	17.3
1983 10 23		06 11.89	+21 53.5					
1983 11 02		06 16.66	+21 37.0	1.409	2.135	124.6	22.5	16.9
1983 11 12		06 18.00	+21 20.6					
1983 11 22		06 15.67	+21 05.1	1.226	2.112	144.9	15.6	16.4
1983 12 02		06 09.77	+20 51.2					
1983 12 12		06 00.93	+20 38.6	1.119	2.092	168.4	5.4	15.9
1983 12 22		05 50.46	+20 27.4					
1984 01 01		05 40.04	+20 18.1	1.108	2.076	165.7	6.7	15.9
1984 01 11		05 31.39	+20 12.2					
1984 01 21		05 25.83	+20 11.1	1.195	2.062	142.2	17.0	16.3
1984 01 31		05 23.99	+20 15.6					
1984 02 10		05 26.01	+20 24.9	1.352	2.053	122.0	24.0	16.8
1984 02 20		05 31.63	+20 37.6					
1984 03 01		05 40.42	+20 51.3	1.550	2.048	105.3	27.8	17.1

1981 EG		a,e,i = 2.26, 0.07, 7				Elements MPC		5980
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 09 23		05 57.31	+21 56.7	2.150	2.366	89.6	25.1	18.6
1983 10 03		06 07.79	+22 13.7					
1983 10 13		06 16.19	+22 31.6	1.890	2.353	104.9	24.2	18.3
1983 10 23		06 22.13	+22 52.4					
1983 11 02		06 25.16	+23 17.8	1.648	2.339	122.8	20.9	17.9
1983 11 12		06 24.87	+23 49.1					
1983 11 22		06 21.01	+24 26.1	1.452	2.324	143.8	14.5	17.5
1983 12 02		06 13.64	+25 07.0					
1983 12 12		06 03.33	+25 48.1	1.336	2.308	167.9	5.1	17.0
1983 12 22		05 51.29	+26 25.0					
1984 01 01		05 39.14	+26 54.6	1.327	2.292	165.6	6.1	17.0
1984 01 11		05 28.59	+27 16.2					
1984 01 21		05 21.00	+27 31.6	1.422	2.276	141.5	15.6	17.4
1984 01 31		05 17.07	+27 43.5					
1984 02 10		05 17.01	+27 54.2	1.593	2.259	120.4	22.1	17.8
1984 02 20		05 20.63	+28 04.7					
1984 03 01		05 27.54	+28 14.8	1.806	2.242	102.7	25.5	18.1

1979 UC		a,e,i = 2.37, 0.13, 8				Elements MPC		7154
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 10 13		06 24.26	+23 58.4	2.020	2.447	103.1	23.4	18.0
1983 10 23		06 29.20	+24 25.7					
1983 11 02		06 31.16	+24 57.9	1.807	2.474	121.4	20.0	17.7
1983 11 12		06 29.81	+25 35.4					
1983 11 22		06 25.03	+26 17.1	1.640	2.500	142.9	13.8	17.4
1983 12 02		06 17.04	+27 00.0					
1983 12 12		06 06.47	+27 40.2	1.557	2.525	166.8	5.1	17.1
1983 12 22		05 54.55	+28 13.2					
1984 01 01		05 42.75	+28 36.7	1.583	2.548	165.9	5.4	17.1
1984 01 11		05 32.54	+28 50.8					
1984 01 21		05 25.02	+28 57.8	1.720	2.570	142.3	13.5	17.5
1984 01 31		05 20.76	+29 00.9					
1984 02 10		05 19.90	+29 02.5	1.939	2.590	121.0	19.0	17.9
1984 02 20		05 22.25	+29 04.1					
1984 03 01		05 27.47	+29 06.2	2.205	2.608	102.7	21.8	18.3
1984 03 11		05 35.18	+29 08.1					
1984 03 21		05 44.99	+29 09.2	2.488	2.625	86.6	22.3	18.6

(2673) 1980 KN		a,e,i = 3.21, 0.14, 2				Elements MPC		6948
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 10 13		06 22.33	+23 42.3	3.236	3.603	103.5	15.6	19.2
1983 10 23		06 24.46	+23 45.8					
1983 11 02		06 24.53	+23 50.9	2.952	3.590	122.9	13.4	18.9
1983 11 12		06 22.41	+23 57.5					
1983 11 22		06 18.14	+24 05.1	2.725	3.575	144.5	9.2	18.7
1983 12 02		06 11.94	+24 12.8					
1983 12 12		06 04.22	+24 19.6	2.591	3.560	167.9	3.3	18.3
1983 12 22		05 55.66	+24 24.3					
1984 01 01		05 47.05	+24 26.6	2.577	3.544	167.7	3.4	18.3
1984 01 11		05 39.19	+24 26.7					
1984 01 21		05 32.80	+24 25.4	2.681	3.526	144.1	9.4	18.6
1984 01 31		05 28.35	+24 24.0					
1984 02 10		05 26.11	+24 23.2	2.880	3.508	122.3	13.8	18.8
1984 02 20		05 26.14	+24 23.8					
1984 03 01		05 28.36	+24 25.8	3.134	3.488	102.7	16.1	19.1
1984 03 11		05 32.60	+24 28.9					
1984 03 21		05 38.66	+24 32.4	3.408	3.468	85.1	16.6	19.2

1978 QK		a,e,i = 2.61, 0.14, 15				Elements MPC		7839
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 10 13		06 13.54	+05 22.3	1.996	2.442	104.3	23.3	18.0
1983 10 23		06 19.31	+04 04.5					
1983 11 02		06 22.56	+02 45.0	1.758	2.415	120.2	20.8	17.6
1983 11 12		06 22.98	+01 28.0					
1983 11 22		06 20.48	+00 18.9	1.566	2.388	137.4	16.3	17.2
1983 12 02		06 15.19	-00 35.9					
1983 12 12		06 07.58	-01 09.7	1.447	2.364	152.3	11.2	16.9
1983 12 22		05 58.58	-01 17.2					
1984 01 01		05 49.37	-00 56.3	1.422	2.341	152.9	11.0	16.9
1984 01 11		05 41.22	-00 08.2					
1984 01 21		05 35.21	+01 02.2	1.492	2.320	138.2	16.4	17.1
1984 01 31		05 32.01	+02 28.1					
1984 02 10		05 31.93	+04 02.9	1.637	2.302	120.6	21.7	17.4
1984 02 20		05 34.95	+05 40.5					
1984 03 01		05 40.86	+07 16.1	1.829	2.286	104.3	24.8	17.7
1984 03 11		05 49.38	+08 46.3					
1984 03 21		06 00.15	+10 08.4	2.043	2.272	89.9	26.0	17.9

1982 QO		a,e,i = 3.06, 0.11, 10				Elements MPC		7446
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 10 13		06 25.50	+11 41.4	2.456	2.836	-0.93	-0.8	18.2
1983 10 23		06 29.65	+11 03.6					
1983 11 02		06 31.45	+10 27.4	2.228	2.854	-1.03	-0.9	17.9
1983 11 12		06 30.73	+09 55.0					
1983 11 22		06 27.51	+09 29.0	2.047	2.872	-1.15	-1.0	17.6
1983 12 02		06 21.99	+09 11.7					
1983 12 12		06 14.65	+09 05.3	1.948	2.891	-1.23	-1.2	17.4
1983 12 22		06 06.27	+09 10.8					
1984 01 01		05 57.76	+09 28.2	1.956	2.910	-1.23	-1.3	17.4
1984 01 11		05 50.08	+09 56.4					
1984 01 21		05 44.06	+10 33.3	2.075	2.930	-1.14	-1.3	17.7
1984 01 31		05 40.20	+11 16.4					
1984 02 10		05 38.78	+12 03.1	2.284	2.951	-1.02	-1.2	18.0
1984 02 20		05 39.82	+12 51.0					
1984 03 01		05 43.17	+13 38.1	2.550	2.972	-0.91	-1.1	18.3
1984 03 11		05 48.65	+14 22.7					
1984 03 21		05 55.98	+15 03.4	2.841	2.993	-0.81	-0.8	18.6

1979 SV9		a, e, i = 2.30, 0.14, 5				Elements MPC		7137
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation	Mag.	
1983 10 13		06 34.18	+17 38.7	2.007	2.397	-1.13 +0.9	18.5	
1983 10 23		06 39.74	+17 03.4					
1983 11 02		06 42.46	+16 28.8	1.794	2.425	-1.28 +1.1	18.2	
1983 11 12		06 42.05	+15 56.9					
1983 11 22		06 38.39	+15 29.4	1.621	2.451	-1.47 +1.0	17.9	
1983 12 02		06 31.67	+15 07.9					
1983 12 12		06 22.40	+14 53.6	1.523	2.476	-1.61 +0.7	17.5	
1983 12 22		06 11.63	+14 47.0					
1984 01 01		06 00.63	+14 48.2	1.531	2.500	-1.62 +0.2	17.5	
1984 01 11		05 50.76	+14 57.0					
1984 01 21		05 43.10	+15 12.4	1.649	2.521	-1.47 -0.1	17.9	
1984 01 31		05 38.31	+15 33.3					
1984 02 10		05 36.62	+15 58.2	1.853	2.541	-1.27 -0.2	18.3	
1984 02 20		05 37.97	+16 25.4					
1984 03 01		05 42.07	+16 53.0	2.110	2.559	-1.09 -0.0	18.7	
1984 03 11		05 48.62	+17 19.5					
1984 03 21		05 57.25	+17 43.1	2.387	2.574	-0.96 +0.2	19.0	

(2748) 1981 JF2		a, e, i = 2.81, 0.13, 4				Elements MPC		7232
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 10 13		06 40.30	+27 57.1	2.479	2.824	99.7	20.4	18.7
1983 10 23		06 45.25	+28 08.5					
1983 11 02		06 47.61	+28 22.6	2.248	2.851	117.9	17.9	18.4
1983 11 12		06 47.12	+28 39.4					
1983 11 22		06 43.69	+28 57.6	2.060	2.877	138.7	13.1	18.2
1983 12 02		06 37.47	+29 15.3					
1983 12 12		06 28.90	+29 29.2	1.952	2.903	161.6	6.2	17.9
1983 12 22		06 18.86	+29 36.4					
1984 01 01		06 08.45	+29 35.3	1.954	2.928	170.4	3.2	17.8
1984 01 11		05 58.86	+29 26.0					
1984 01 21		05 51.13	+29 10.5	2.072	2.953	147.9	10.2	18.2
1984 01 31		05 45.89	+28 51.4					
1984 02 10		05 43.45	+28 31.3	2.285	2.976	126.2	15.5	18.5
1984 02 20		05 43.82	+28 11.9					
1984 03 01		05 46.78	+27 54.0	2.557	2.999	106.9	18.4	18.8
1984 03 11		05 52.07	+27 37.6					
1984 03 21		05 59.36	+27 21.9	2.855	3.020	89.8	19.3	19.1

(2749) 1937 TD		a, e, i = 3.17, 0.17, 0				Elements MPC		7234
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 10 13		06 34.47	+23 35.2	2.248	2.623	100.7	21.9	16.9
1983 10 23		06 41.27	+23 30.6					
1983 11 02		06 45.58	+23 27.7	2.009	2.626	118.1	19.5	16.6
1983 11 12		06 47.10	+23 27.5					
1983 11 22		06 45.70	+23 30.5	1.812	2.632	138.2	14.5	16.2
1983 12 02		06 41.43	+23 36.1					
1983 12 12		06 34.65	+23 43.1	1.690	2.641	161.0	7.0	15.9
1983 12 22		06 26.17	+23 49.5					
1984 01 01		06 17.05	+23 54.0	1.672	2.652	174.6	2.0	15.6
1984 01 11		06 08.52	+23 55.8					
1984 01 21		06 01.69	+23 55.3	1.764	2.666	150.7	10.4	16.1
1984 01 31		05 57.30	+23 53.7					
1984 02 10		05 55.74	+23 51.9	1.950	2.683	129.1	16.6	16.5
1984 02 20		05 57.06	+23 50.2					
1984 03 01		06 01.08	+23 48.6	2.196	2.702	110.1	20.1	16.8
1984 03 11		06 07.52	+23 46.3					
1984 03 21		06 16.06	+23 42.3	2.473	2.724	93.6	21.4	17.1

1981 EG14		a,e,i = 2.36, 0.10, 6				Elements MPC		7587
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 10 13		06 33.64	+19 38.4	1.699	2.123	-1.57	+2.8	17.9
1983 10 23		06 42.60	+18 49.7					
1983 11 02		06 48.64	+17 58.7	1.491	2.131	-1.81	+3.4	17.6
1983 11 12		06 51.34	+17 07.7					
1983 11 22		06 50.46	+16 19.2	1.318	2.142	-2.11	+3.7	17.2
1983 12 02		06 45.98	+15 35.6					
1983 12 12		06 38.28	+14 59.2	1.210	2.155	-2.37	+3.5	16.8
1983 12 22		06 28.37	+14 31.9					
1984 01 01		06 17.65	+14 15.0	1.195	2.169	-2.40	+2.9	16.6
1984 01 11		06 07.76	+14 09.1					
1984 01 21		06 00.11	+14 13.6	1.283	2.186	-2.17	+2.3	17.0
1984 01 31		05 55.57	+14 26.7					
1984 02 10		05 54.51	+14 46.3	1.454	2.204	-1.85	+2.0	17.5
1984 02 20		05 56.86	+15 09.4					
1984 03 01		06 02.29	+15 33.4	1.678	2.224	-1.56	+2.0	17.9
1984 03 11		06 10.43	+15 55.7					
1984 03 21		06 20.83	+16 14.2	1.928	2.245	-1.34	+2.1	18.3

1981 GO		a,e,i = 2.34, 0.06, 3				Elements MPC		6287
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 10 13		06 35.85	+19 08.9	1.918	2.312	-1.35	+0.3	18.8
1983 10 23		06 43.77	+18 46.0					
1983 11 02		06 49.07	+18 24.0	1.674	2.298	-1.58	+0.7	18.4
1983 11 12		06 51.35	+18 05.2					
1983 11 22		06 50.31	+17 51.5	1.466	2.285	-1.86	+0.9	18.0
1983 12 02		06 45.88	+17 44.3					
1983 12 12		06 38.30	+17 44.4	1.325	2.272	-2.10	+0.6	17.6
1983 12 22		06 28.41	+17 51.2					
1984 01 01		06 17.47	+18 03.6	1.281	2.260	-2.16	-0.2	17.3
1984 01 11		06 07.05	+18 20.4					
1984 01 21		05 58.64	+18 40.4	1.344	2.249	-1.99	-0.8	17.7
1984 01 31		05 53.24	+19 03.0					
1984 02 10		05 51.35	+19 27.2	1.492	2.238	-1.73	-1.0	18.1
1984 02 20		05 53.02	+19 51.9					
1984 03 01		05 57.98	+20 15.5	1.694	2.229	-1.49	-0.7	18.5
1984 03 11		06 05.89	+20 36.6					
1984 03 21		06 16.30	+20 53.4	1.921	2.220	-1.31	-0.2	18.8

2533 P-L		a,e,i = 2.18, 0.21, 2				Elements MPC		5523
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 10 13		06 50.48	+21 36.3	1.968	2.311	96.9	25.4	19.9
1983 10 23		06 57.06	+21 26.8					
1983 11 02		07 00.73	+21 20.9	1.765	2.355	114.4	22.6	19.6
1983 11 12		07 01.11	+21 20.1					
1983 11 22		06 58.00	+21 25.1	1.593	2.397	135.1	16.9	19.3
1983 12 02		06 51.42	+21 35.5					
1983 12 12		06 41.81	+21 49.5	1.490	2.435	159.2	8.3	19.0
1983 12 22		06 30.14	+22 04.4					
1984 01 01		06 17.79	+22 17.8	1.490	2.471	174.7	2.1	18.7
1984 01 11		06 06.28	+22 28.6					
1984 01 21		05 56.96	+22 36.9	1.605	2.504	149.6	11.5	19.3
1984 01 31		05 50.63	+22 43.9					
1984 02 10		05 47.65	+22 50.7	1.812	2.533	127.2	18.1	19.7
1984 02 20		05 47.95	+22 57.7					
1984 03 01		05 51.23	+23 04.7	2.075	2.559	107.9	21.6	20.1
1984 03 11		05 57.15	+23 11.1					
1984 03 21		06 05.29	+23 15.7	2.363	2.582	91.1	22.7	20.4

(2510) Shandong		a,e,i = 2.25, 0.20, 5				Elements MPC		6523
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 10 13		06 49.95	+20 23.4	2.122	2.451	96.9	23.8	17.6
1983 10 23		06 55.95	+20 21.0					
1983 11 02		06 59.22	+20 23.0	1.904	2.487	114.6	21.3	17.4
1983 11 12		06 59.41	+20 30.9					
1983 11 22		06 56.35	+20 45.5	1.719	2.520	135.4	16.0	17.1
1983 12 02		06 50.05	+21 06.5					
1983 12 12		06 40.89	+21 32.0	1.606	2.551	159.4	7.8	16.7
1983 12 22		06 29.76	+21 59.4					
1984 01 01		06 17.90	+22 25.7	1.598	2.579	174.8	2.0	16.5
1984 01 11		06 06.72	+22 48.9					
1984 01 21		05 57.52	+23 08.8	1.706	2.604	149.8	11.0	17.0
1984 01 31		05 51.09	+23 25.8					
1984 02 10		05 47.85	+23 41.0	1.909	2.626	127.3	17.4	17.4
1984 02 20		05 47.79	+23 55.0					
1984 03 01		05 50.68	+24 07.8	2.169	2.645	107.7	20.9	17.8
1984 03 11		05 56.19	+24 19.2					
1984 03 21		06 03.94	+24 28.4	2.454	2.661	90.8	22.0	18.1

1981 EM18		a,e,i = 2.28, 0.10, 6				Elements MPC		7932
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 10 13		06 38.84	+30 11.2	1.926	2.319	-1.46	+2.2	18.8
1983 10 23		06 47.66	+30 28.0					
1983 11 02		06 53.73	+30 47.8	1.674	2.297	-1.73	+3.3	18.4
1983 11 12		06 56.53	+31 11.1					
1983 11 22		06 55.65	+31 37.3	1.459	2.275	-2.07	+3.9	18.0
1983 12 02		06 50.85	+32 03.7					
1983 12 12		06 42.32	+32 25.3	1.309	2.252	-2.38	+3.2	17.6
1983 12 22		06 30.92	+32 36.1					
1984 01 01		06 18.17	+32 31.2	1.256	2.229	-2.47	+1.3	17.3
1984 01 11		06 06.01	+32 09.5					
1984 01 21		05 56.25	+31 34.3	1.307	2.207	-2.24	-0.2	17.6
1984 01 31		05 50.05	+30 51.6					
1984 02 10		05 47.92	+30 06.7	1.444	2.185	-1.91	-0.4	18.0
1984 02 20		05 49.83	+29 23.3					
1984 03 01		05 55.35	+28 42.5	1.632	2.165	-1.61	+0.3	18.3
1984 03 11		06 04.03	+28 03.9					
1984 03 21		06 15.34	+27 26.0	1.843	2.145	-1.40	+1.3	18.6

4120 P-L		a,e,i = 3.13, 0.16, 18				Elements MPC		7602
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 10 13		06 37.25	+03 23.0	2.311	2.645	98.2	21.9	17.9
1983 10 23		06 43.56	+01 50.7					
1983 11 02		06 47.63	+00 16.4	2.079	2.637	113.5	20.2	17.7
1983 11 12		06 49.22	-01 15.9					
1983 11 22		06 48.23	-02 41.5	1.888	2.633	129.9	16.7	17.4
1983 12 02		06 44.71	-03 54.6					
1983 12 12		06 38.97	-04 49.1	1.763	2.631	145.0	12.4	17.1
1983 12 22		06 31.64	-05 19.5					
1984 01 01		06 23.61	-05 22.7	1.727	2.631	151.2	10.4	17.0
1984 01 11		06 15.88	-04 58.2					
1984 01 21		06 09.46	-04 09.3	1.788	2.635	142.2	13.2	17.2
1984 01 31		06 05.06	-03 01.4					
1984 02 10		06 03.15	-01 40.9	1.934	2.641	126.4	17.5	17.4
1984 02 20		06 03.86	-00 14.3					
1984 03 01		06 07.13	+01 13.2	2.141	2.650	110.1	20.6	17.7
1984 03 11		06 12.77	+02 37.4					
1984 03 21		06 20.51	+03 55.3	2.382	2.661	95.0	21.9	18.0

(2823) 2010 P-L		a,e,i = 2.41, 0.09, 4			Elements MPC		7598	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 10 13		06 49.05	+22 23.0	1.935	2.287	97.3	25.6	18.3
1983 10 23		06 57.40	+21 55.6					
1983 11 02		07 03.00	+21 28.8	1.717	2.305	113.9	23.2	18.0
1983 11 12		07 05.46	+21 04.4					
1983 11 22		07 04.53	+20 43.8	1.530	2.324	133.5	17.9	17.7
1983 12 02		07 00.14	+20 27.4					
1983 12 12		06 52.59	+20 15.0	1.408	2.343	156.4	9.7	17.3
1983 12 22		06 42.69	+20 05.7					
1984 01 01		06 31.69	+19 58.4	1.381	2.363	176.3	1.6	16.9
1984 01 11		06 21.09	+19 52.7					
1984 01 21		06 12.31	+19 48.6	1.464	2.384	153.0	10.8	17.5
1984 01 31		06 06.30	+19 46.8					
1984 02 10		06 03.55	+19 47.3	1.640	2.404	130.8	18.1	17.9
1984 02 20		06 04.09	+19 49.7					
1984 03 01		06 07.69	+19 53.0	1.877	2.424	111.6	22.3	18.3
1984 03 11		06 14.01	+19 55.8					
1984 03 21		06 22.63	+19 56.7	2.143	2.444	95.2	24.0	18.6

1981 EQ19		a,e,i = 2.38, 0.18, 3			Elements MPC		7933	
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation	Mag.	
1983 10 13		06 50.45	+20 02.5	1.723	2.090	-1.48	+1.6	18.4
1983 10 23		07 00.11	+19 31.7					
1983 11 02		07 06.84	+19 02.4	1.536	2.125	-1.67	+2.2	18.2
1983 11 12		07 10.23	+18 37.0					
1983 11 22		07 10.02	+18 17.9	1.375	2.163	-1.94	+2.5	17.8
1983 12 02		07 06.11	+18 06.5					
1983 12 12		06 58.80	+18 03.1	1.273	2.203	-2.19	+2.3	17.5
1983 12 22		06 48.94	+18 07.0					
1984 01 01		06 37.86	+18 16.3	1.262	2.243	-2.26	+1.5	17.2
1984 01 11		06 27.17	+18 29.3					
1984 01 21		06 18.35	+18 44.7	1.357	2.284	-2.08	+0.7	17.7
1984 01 31		06 12.41	+19 01.4					
1984 02 10		06 09.83	+19 18.7	1.545	2.325	-1.77	+0.4	18.2
1984 02 20		06 10.62	+19 35.7					
1984 03 01		06 14.49	+19 51.2	1.793	2.366	-1.48	+0.5	18.7
1984 03 11		06 21.08	+20 04.1					
1984 03 21		06 29.95	+20 13.1	2.074	2.407	-1.26	+0.9	19.0

1981 EP20		a,e,i = 2.37, 0.22, 2			Elements MPC		7933	
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation	Mag.	
1983 10 13		06 48.20	+25 25.0	1.551	1.954	-1.77	+1.4	18.6
1983 10 23		06 59.67	+25 28.7					
1983 11 02		07 08.00	+25 35.7	1.382	1.993	-2.02	+2.8	18.3
1983 11 12		07 12.65	+25 48.3					
1983 11 22		07 13.27	+26 07.5	1.238	2.037	-2.36	+3.7	18.0
1983 12 02		07 09.67	+26 32.3					
1983 12 12		07 02.11	+26 59.3	1.150	2.083	-2.70	+3.3	17.7
1983 12 22		06 51.56	+27 23.4					
1984 01 01		06 39.59	+27 39.4	1.150	2.131	-2.78	+1.5	17.3
1984 01 11		06 28.10	+27 44.8					
1984 01 21		06 18.87	+27 40.4	1.253	2.181	-2.51	-0.1	17.9
1984 01 31		06 12.96	+27 29.2					
1984 02 10		06 10.82	+27 14.4	1.445	2.232	-2.09	-0.5	18.5
1984 02 20		06 12.36	+26 58.1					
1984 03 01		06 17.17	+26 40.9	1.697	2.283	-1.72	-0.0	19.0
1984 03 11		06 24.77	+26 22.7					
1984 03 21		06 34.65	+26 02.5	1.982	2.334	-1.43	+0.7	19.4

1979 MB6		a,e,i = 2.23, 0.19, 4				Elements MPC		6639
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 10 13		06 57.45	+18 40.2	1.694	2.040	95.0	29.2	20.4
1983 10 23		07 07.28	+18 12.8					
1983 11 02		07 14.16	+17 48.4	1.514	2.084	110.8	26.4	20.1
1983 11 12		07 17.67	+17 29.8					
1983 11 22		07 17.52	+17 19.6	1.356	2.129	129.9	20.8	19.8
1983 12 02		07 13.58	+17 19.3					
1983 12 12		07 06.05	+17 29.5	1.253	2.175	152.7	12.0	19.5
1983 12 22		06 55.77	+17 48.5					
1984 01 01		06 44.04	+18 13.7	1.239	2.220	175.0	2.2	19.1
1984 01 11		06 32.53	+18 42.0					
1984 01 21		06 22.85	+19 10.8	1.333	2.265	155.4	10.4	19.6
1984 01 31		06 16.07	+19 38.8					
1984 02 10		06 12.74	+20 05.1	1.520	2.308	132.9	18.2	20.1
1984 02 20		06 12.92	+20 29.0					
1984 03 01		06 16.29	+20 50.0	1.770	2.350	113.7	22.7	20.6
1984 03 11		06 22.49	+21 07.1					
1984 03 21		06 31.06	+21 19.3	2.052	2.390	97.1	24.4	21.0

1981 DQ2		a,e,i = 2.27, 0.13, 6				Elements MPC		7358
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1983 10 13		06 41.83	+21 59.8	1.618	2.029	-1.78	+3.8	18.8
1983 10 23		06 53.53	+21 13.9					
1983 11 02		07 02.61	+20 24.0	1.392	2.010	-2.09	+5.2	18.4
1983 11 12		07 08.54	+19 32.5					
1983 11 22		07 10.91	+18 41.6	1.195	1.993	-2.50	+6.2	17.9
1983 12 02		07 09.41	+17 53.7					
1983 12 12		07 04.06	+17 10.7	1.052	1.981	-2.92	+6.6	17.4
1983 12 22		06 55.48	+16 34.5					
1984 01 01		06 44.92	+16 06.1	0.993	1.972	-3.10	+6.0	17.0
1984 01 11		06 34.15	+15 46.8					
1984 01 21		06 25.06	+15 36.7	1.030	1.967	-2.87	+5.1	17.3
1984 01 31		06 19.02	+15 35.3					
1984 02 10		06 16.81	+15 41.0	1.151	1.966	-2.44	+4.4	17.8
1984 02 20		06 18.57	+15 51.3					
1984 03 01		06 23.98	+16 03.1	1.328	1.969	-2.04	+4.2	18.2
1984 03 11		06 32.63	+16 13.5					
1984 03 21		06 43.99	+16 19.8	1.536	1.976	-1.73	+4.2	18.6

(2781) 1982 QH		a,e,i = 3.15, 0.19, 2				Elements MPC		7371
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 10 13		06 59.06	+20 24.0	2.355	2.633	94.8	22.2	17.5
1983 10 23		07 06.64	+20 07.6					
1983 11 02		07 11.89	+19 54.0	2.124	2.655	111.6	20.3	17.2
1983 11 12		07 14.52	+19 44.7					
1983 11 22		07 14.37	+19 41.2	1.926	2.680	131.1	16.1	16.9
1983 12 02		07 11.41	+19 44.0					
1983 12 12		07 05.81	+19 52.7	1.791	2.708	153.3	9.4	16.6
1983 12 22		06 58.17	+20 06.2					
1984 01 01		06 49.34	+20 22.4	1.755	2.737	176.6	1.2	16.2
1984 01 11		06 40.43	+20 39.5					
1984 01 21		06 32.56	+20 56.0	1.831	2.768	157.8	7.7	16.7
1984 01 31		06 26.60	+21 11.2					
1984 02 10		06 23.13	+21 24.8	2.010	2.800	135.4	14.3	17.1
1984 02 20		06 22.38	+21 36.7					
1984 03 01		06 24.27	+21 46.6	2.262	2.833	115.5	18.4	17.5
1984 03 11		06 28.63	+21 54.0					
1984 03 21		06 35.14	+21 58.3	2.554	2.868	98.0	20.1	17.8

(2767) 1967 UM		a,e,i = 3.02, 0.08, 11			Elements MPC		7363	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 10 13		07 10.18	+26 48.4	2.942	3.155	93.0	18.4	17.8
1983 10 23		07 15.98	+27 12.1					
1983 11 02		07 19.70	+27 41.6	2.677	3.168	110.8	17.0	17.5
1983 11 12		07 21.06	+28 17.4					
1983 11 22		07 19.89	+28 59.2	2.446	3.180	130.8	13.6	17.3
1983 12 02		07 16.12	+29 45.5					
1983 12 12		07 09.87	+30 33.4	2.285	3.192	152.7	8.1	17.0
1983 12 22		07 01.61	+31 18.9					
1984 01 01		06 52.08	+31 57.8	2.228	3.203	170.8	2.8	16.7
1984 01 11		06 42.27	+32 27.0					
1984 01 21		06 33.25	+32 45.1	2.291	3.213	155.6	7.3	17.0
1984 01 31		06 25.92	+32 52.9					
1984 02 10		06 20.90	+32 52.2	2.460	3.222	133.7	12.8	17.3
1984 02 20		06 18.52	+32 45.6					
1984 03 01		06 18.79	+32 35.2	2.705	3.231	113.6	16.3	17.6
1984 03 11		06 21.58	+32 22.2					
1984 03 21		06 26.64	+32 07.5	2.987	3.239	95.5	17.8	17.8
1973 UX5		a,e,i = 2.15, 0.17, 1			Elements MPC		6054	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 10 13		07 16.63	+21 43.4	2.167	2.400	90.9	24.6	19.6
1983 10 23		07 24.90	+21 27.0					
1983 11 02		07 30.71	+21 14.5	1.934	2.424	107.5	23.0	19.4
1983 11 12		07 33.66	+21 07.8					
1983 11 22		07 33.44	+21 08.3	1.721	2.446	126.9	18.8	19.1
1983 12 02		07 29.86	+21 16.6					
1983 12 12		07 22.93	+21 31.8	1.564	2.464	149.7	11.6	18.7
1983 12 22		07 13.14	+21 51.6					
1984 01 01		07 01.45	+22 12.7	1.499	2.480	175.1	2.0	18.2
1984 01 11		06 49.23	+22 31.7					
1984 01 21		06 38.02	+22 46.7	1.549	2.493	159.1	8.1	18.6
1984 01 31		06 29.06	+22 57.3					
1984 02 10		06 23.18	+23 04.4	1.702	2.502	135.4	16.1	19.0
1984 02 20		06 20.69	+23 09.0					
1984 03 01		06 21.48	+23 11.6	1.926	2.509	114.8	21.0	19.4
1984 03 11		06 25.29	+23 12.1					
1984 03 21		06 31.73	+23 10.1	2.185	2.512	97.2	23.2	19.7
1979 OB		a,e,i = 2.22, 0.28, 6			Elements MPC		7020	
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 10 13		07 22.30	+15 58.6	2.257	2.448	88.8	24.0	20.3
1983 10 23		07 29.44	+15 19.8					
1983 11 02		07 34.12	+14 44.0	2.046	2.502	105.5	22.5	20.1
1983 11 12		07 36.04	+14 13.5					
1983 11 22		07 34.96	+13 50.3	1.854	2.552	125.0	18.5	19.8
1983 12 02		07 30.79	+13 36.2					
1983 12 12		07 23.65	+13 32.4	1.715	2.599	147.4	11.8	19.5
1983 12 22		07 14.09	+13 39.0					
1984 01 01		07 03.00	+13 55.0	1.669	2.642	169.4	3.9	19.2
1984 01 11		06 51.57	+14 18.4					
1984 01 21		06 41.10	+14 46.9	1.740	2.681	158.8	7.6	19.5
1984 01 31		06 32.62	+15 18.1					
1984 02 10		06 26.81	+15 50.0	1.918	2.716	136.0	14.6	19.9
1984 02 20		06 23.94	+16 21.2					
1984 03 01		06 23.97	+16 50.4	2.171	2.747	115.5	19.0	20.3
1984 03 11		06 26.68	+17 16.5					
1984 03 21		06 31.76	+17 38.6	2.463	2.775	97.5	20.9	20.7