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

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

TWX 710-320-6842 ASTROGRAM CAM ** Brian G. Marsden, Director
Telephone 617-495-7244/7440/7444 ** Conrad M. Bardwell, Associate Director

EDITORIAL NOTICE.

Contributors of perturbed orbital elements are advised that use of the Epoch 1985 Dec. 1.0 ET (rather than 1984 Oct. 27.0) will become effective with the 1984 Nov. 8 batch of MPCs.

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ERRATA.

MPC	Line	
8863	-29	For C.-I. LAGERKVIST read B. PETTERSSON
8883	-29	The observation of 1984 AW should have been published under the number (3045).
8892	- 9	For 1984 read 1983
8892	- 1	For 20 read 26
8893	16	For 38 read 44
8894	16	For 58 read 60
8913	10	For Makhsimovich read Maksimovich

* * * * *

CORRECTED OBSERVATIONS.

The following observations correct those previously published.

Object		Date	UT	R. A. (1950)	Decl.	Reference	Mag.	N Obs.
202		1984 02	23.11260	09 42 31.12	+16 07 54.0	MPC 8967		1 809
202		1984 02	23.11952	09 42 30.80	+16 07 57.0	MPC 8967		1 809
202		1984 02	23.12645	09 42 30.49	+16 08 00.0	MPC 8967		1 809
1253		1984 02	23.11260	09 40 31.49	+15 53 50.0	MPC 8970		1 809
1253		1984 02	23.11952	09 40 31.14	+15 53 51.3	MPC 8970		1 809
1253		1984 02	23.12645	09 40 30.80	+15 53 52.7	MPC 8970		1 809
1913		1984 02	23.11260	09 43 31.34	+15 00 06.4	MPC 8974		1 809
1913		1984 02	23.11952	09 43 30.99	+15 00 08.3	MPC 8974		1 809
1913		1984 02	23.12645	09 43 30.64	+15 00 09.4	MPC 8974		1 809
2032		1984 02	23.11260	09 45 45.77	+15 29 36.3	MPC 8976		1 809
2032		1984 02	23.11952	09 45 45.43	+15 29 38.1	MPC 8976		1 809
2032		1984 02	23.12645	09 45 45.07	+15 29 39.6	MPC 8976		1 809
1949 KT	*	1949 05	29.18679	15 56 42.95	-02 17 17.3	MPC 341	17.1	760
1949 KT		1949 05	29.22499	15 56 41.35	-02 17 16.1	MPC 341		760
1971 UN4	*	1971 10	21.79968	00 44 59.82	+06 27 02.4	MPC 6066	16.5	095
1982 UN2		1983 01	18.05840	02 37 02.56	+14 10 49.0	MPC 7759		2 801
1984 DO	*	1984 02	23.11260	09 40 30.08	+14 54 56.9	MPC 8983	18.2	1 809
1984 DO		1984 02	23.11952	09 40 29.61	+14 54 59.0	MPC 8983		1 809
1984 DO		1984 02	23.12645	09 40 29.17	+14 55 01.0	MPC 8983		1 809
1984 DP	*	1984 02	23.11260	09 40 59.70	+15 05 13.5	MPC 8984	17.9	1 809

1984	DP		1984	02	23.11952	09	40	59.33	+15	05	16.2	MPC 8984	1 809
1984	DP		1984	02	23.12645	09	40	58.95	+15	05	19.0	MPC 8984	1 809
1984	DQ	*	1984	02	23.11260	09	42	48.67	+14	44	56.7	MPC 8985 17.8	1 809
1984	DQ		1984	02	23.11952	09	42	48.21	+14	44	56.2	MPC 8985	1 809
1984	DQ		1984	02	23.12645	09	42	47.77	+14	44	55.6	MPC 8985	1 809
1984	DR	*	1984	02	23.11260	09	44	24.08	+14	58	57.1	MPC 8986 17.7	1 809
1984	DR		1984	02	23.11952	09	44	23.68	+14	59	01.0	MPC 8986	1 809
1984	DR		1984	02	23.12645	09	44	23.28	+14	59	04.2	MPC 8986	1 809
1984	EN1		1984	03	10.23824	10	01	35.63	+12	29	16.1	MPC 8997	3 809
1984	EN1		1984	03	10.24309	10	01	35.36	+12	29	17.8	MPC 8997	3 809
1984	EN1		1984	03	10.24794	10	01	35.10	+12	29	19.7	MPC 8997	3 809

Note 1: time originally given as 0.00017 day later. 2: time originally given as 1983 01 18.03756. 3: time originally given as 0.00022 day later.

* * * * *

DELETED OBSERVATIONS.

The following observations are to be deleted.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Obs.
1124	1968	09 02.10896	00 28 28.17	-02 18 26.6	MPC 3448	020
1124	1968	09 02.12628	00 28 27.16	-02 18 39.9	MPC 3448	020
1124	1968	09 04.97181	00 26 23.53	-02 25 44.4	MPC 3448	020
1124	1968	09 04.98635	00 26 22.76	-02 25 37.8	MPC 3448	020
1145	1967	03 16.97528	11 51 12.23	-01 05 38.9	MPC 3346	020
1145	1967	03 16.98913	11 51 11.42	-01 05 34.2	MPC 3346	020
1145	1968	08 26.04753	23 14 46.11	-06 05 15.7	MPC 3448	020
1145	1968	08 26.05861	23 14 46.03	-06 05 17.8	MPC 3448	020
1145	1968	08 31.03704	23 10 08.03	-06 21 51.6	MPC 3448	020
1145	1968	08 31.05366	23 10 06.67	-06 21 49.9	MPC 3448	020
1150	1968	09 19.03775	01 19 00.70	+10 05 01.9	MPC 3448	020
1150	1968	09 19.05021	01 19 00.40	+10 05 02.8	MPC 3448	020
1150	1968	09 22.99310	01 16 51.23	+09 44 09.9	MPC 3448	020
1150	1968	09 23.00487	01 16 51.07	+09 44 09.6	MPC 3448	020
1150	1968	09 24.96135	01 15 25.04	+09 29 30.4	MPC 3449	020
1150	1968	09 24.97382	01 15 23.97	+09 29 29.8	MPC 3449	020
1153	1968	01 18.75993	06 27 14.01	+22 54 41.6	MPC 3449	020
1153	1968	01 18.77378	06 27 12.95	+22 54 39.7	MPC 3449	020
1153	1968	01 23.77303	06 22 11.45	+22 50 32.3	MPC 3449	020
1153	1968	01 23.79450	06 22 10.54	+22 50 42.1	MPC 3449	020
1153	1968	01 25.75740	06 20 59.83	+22 52 25.1	MPC 3449	020
1153	1968	01 25.77887	06 20 58.93	+22 52 36.2	MPC 3449	020
1154	1966	05 16.98913	15 25 38.55	-15 23 02.9	MPC 3346	020
1154	1966	05 17.00853	15 25 37.77	-15 23 05.5	MPC 3346	020
1154	1966	05 20.96194	15 22 54.65	-15 19 54.8	MPC 3346	020
1154	1966	05 20.98341	15 22 53.53	-15 19 41.0	MPC 3346	020
1154	1966	05 26.96772	15 18 25.34	-15 08 57.3	MPC 3346	020
1154	1966	05 26.98399	15 18 24.49	-15 08 58.4	MPC 3346	020
1154	1966	06 07.90708	15 10 58.81	-14 55 31.0	MPC 3346	020
1154	1966	06 07.92769	15 10 57.69	-14 55 25.7	MPC 3346	020
1154	1966	06 13.88	15 07.7	-14 52	MPC 2703	020
1154	1969	12 09.02154	05 26 07.74	+22 46 06.1	MPC 3449	020
1154	1969	12 09.03227	05 26 07.49	+22 46 05.7	MPC 3449	020
1155	1968	09 05.05560	00 55 13.37	-00 35 19.3	MPC 3449	020
1155	1968	09 05.07291	00 55 12.28	-00 35 15.4	MPC 3449	020
1155	1968	09 18.98512	00 44 49.77	-01 30 20.0	MPC 3449	020
1155	1968	09 19.00728	00 44 48.24	-01 30 23.3	MPC 3449	020
1155	1968	09 22.91138	00 41 01.28	-01 48 29.8	MPC 3449	020

1155	1968	09	22.93285	00	41	00.09	-01	48	22.1	MPC 3449 020
1155	1969	12	09.05305	06	33	20.89	+31	04	51.4	MPC 3449 020
1155	1969	12	09.06413	06	33	20.53	+31	04	51.9	MPC 3449 020
1167	1967	06	29.87120	16	38	59.86	-17	31	36.4	MPC 3346 020
1167	1967	06	29.89613	16	38	59.53	-17	31	29.4	MPC 3346 020
1167	1967	06	30.89592	16	40	05.81	-17	27	36.8	MPC 3346 020
1167	1967	06	30.90977	16	40	04.87	-17	27	28.2	MPC 3346 020
1167	1967	07	05.92352	16	37	17.31	-17	21	43.3	MPC 3346 020
1169	1967	01	14.03304	07	53	17.01	+15	47	28.5	MPC 3346 020
1169	1967	01	14.04406	07	53	16.33	+15	47	45.3	MPC 3346 020
1169	1967	02	01.87155	07	34	06.32	+16	09	27.6	MPC 3346 020
1169	1967	02	01.91387	07	34	05.38	+16	09	35.5	MPC 3346 020
1172	1968	01	02.86647	05	18	07.99	+17	04	40.8	MPC 3449 020
1172	1968	01	02.89348	05	18	07.28	+17	04	41.0	MPC 3449 020
1184	1968	02	27.97269	11	53	20.04	+02	19	22.2	MPC 3449 020
1184	1968	02	27.98861	11	53	19.01	+02	19	17.2	MPC 3449 020
1184	1968	02	29.99650	11	51	18.35	+02	20	46.6	MPC 3449 020
1184	1968	03	01.01377	11	51	16.87	+02	20	57.0	MPC 3449 020
1185	1966	06	07.91833	15	38	09.71	-18	22	22.1	MPC 3346 020
1185	1966	06	07.93911	15	38	07.71	-18	22	29.9	MPC 3346 020
1204	1967	02	07.90555	08	43	10.38	+20	42	51.4	MPC 3346 020
1204	1967	02	07.91871	08	43	09.29	+20	42	52.9	MPC 3346 020
1204	1967	02	11.89638	08	38	38.33	+20	56	35.8	MPC 3346 020
1204	1967	02	11.91438	08	38	37.44	+20	56	40.7	MPC 3346 020
1211	1968	01	27.01728	09	37	47.77	+16	34	46.3	MPC 3450 020
1211	1968	01	27.03113	09	37	46.59	+16	34	45.2	MPC 3450 020
1213	1971	01	06.85291	05	12	39.48	+24	13	55.7	MPC 6384 020
1213	1971	01	06.86399	05	12	39.14	+24	13	55.7	MPC 6384 020
1218	1968	12	18.80312	03	23	37.86	+19	01	06.4	MPC 3450 020
1218	1968	12	18.81627	03	23	37.46	+19	01	03.3	MPC 3450 020
1222	1969	05	13.91667	14	35	48.59	-26	15	44.5	MPC 3450 020
1222	1969	05	13.92779	14	35	48.15	-26	15	37.1	MPC 3450 020
1228	1968	09	25.02991	01	34	31.57	+14	22	45.3	MPC 3450 020
1228	1968	09	25.04861	01	34	30.62	+14	22	36.5	MPC 3450 020
1228	1968	09	30.00162	01	29	52.14	+14	08	32.9	MPC 3450 020
1228	1968	09	30.01478	01	29	50.85	+14	08	40.8	MPC 3450 020
1228	1968	10	02.00110	01	28	19.55	+14	02	09.3	MPC 3450 020
1228	1968	10	02.01426	01	28	19.14	+14	02	11.9	MPC 3450 020
1245	1972	08	09.88950	21	02	14.38	-15	41	17.8	MPC 5167 073
1245	1972	08	09.90196	21	02	13.20	-15	41	29.0	MPC 5167 073
1245	1972	08	28.78708	20	48	31.41	-16	47	42.5	MPC 5167 073
1245	1972	08	28.79816	20	48	30.92	-16	47	37.8	MPC 5167 073
1247	1969	02	18.06701	11	15	53.30	+04	41	56.4	MPC 3450 020
1247	1969	02	18.09782	11	15	52.01	+04	42	04.0	MPC 3450 020
1256	1968	03	29.93766	12	49	38.25	-09	34	32.4	MPC 3450 020
1256	1968	03	29.95497	12	49	37.45	-09	34	23.5	MPC 3450 020
1257	1971	08	16.85936	20	32	20.59	-12	03	18.6	MPC 6384 020
1257	1971	08	16.86975	20	32	19.77	-12	03	16.9	MPC 6384 020
1258	1971	06	03.06483	18	55	25.66	-27	55	24.6	MPC 6384 020
1258	1971	06	03.07661	18	55	25.20	-27	55	25.0	MPC 6384 020
1260	1967	02	07.96858	10	03	01.03	+07	08	39.3	MPC 3347 020
1260	1967	02	07.98104	10	02	59.94	+07	08	39.9	MPC 3347 020
1260	1967	02	18.96274	09	52	29.63	+07	30	28.4	MPC 3347 020
1260	1967	02	18.97382	09	52	29.16	+07	30	25.4	MPC 3347 020
1261	1971	01	06.85291	05	09	50.32	+24	02	50.1	MPC 6384 020
1261	1971	01	06.86399	05	09	48.90	+24	02	50.2	MPC 6384 020
1271	1970	11	04.01368	02	42	53.80	+04	24	49.8	MPC 6384 020
1271	1970	11	04.02268	02	42	52.88	+04	24	45.0	MPC 6384 020
1277	1969	07	17.01389	20	50	17.03	-04	57	53.6	MPC 3405 048

1277		1969	07	17.03889	20	50	18.66	-04	57	54.9	MPC 3405	048
1277		1969	08	08.92700	20	36	32.26	-05	52	05.3	MPC 3450	020
1277		1969	08	08.93600	20	36	32.09	-05	52	05.1	MPC 3450	020
1279		1969	02	18.06701	11	28	28.73	+02	07	46.2	MPC 3451	020
1279		1969	02	18.09782	11	28	28.16	+02	07	46.4	MPC 3451	020
1283		1968	02	27.93875	10	45	53.19	+08	14	11.2	MPC 3451	020
1283		1968	02	27.95329	10	45	52.77	+08	14	20.3	MPC 3451	020
1283		1968	02	29.95702	10	44	22.69	+08	25	44.9	MPC 3451	020
1283		1968	02	29.97157	10	44	22.23	+08	25	50.1	MPC 3451	020
1283		1968	03	18.92631	10	33	06.81	+10	16	02.0	MPC 3451	020
1283		1968	03	18.94137	10	33	05.70	+10	16	03.7	MPC 3451	020
1286		1970	10	23.90986	00	32	32.20	+04	47	40.7	MPC 6384	020
1286		1970	10	23.92509	00	32	31.66	+04	47	38.6	MPC 6384	020
1288		1967	07	12.01683	21	27	28.77	-13	00	12.5	MPC 3348	020
1288		1967	07	12.02514	21	27	27.95	-13	00	19.0	MPC 3348	020
1289		1971	06	03.03471	17	29	03.85	-20	57	55.2	MPC 6384	020
1289		1971	06	03.04580	17	29	03.50	-20	57	59.5	MPC 6384	020
1295		1967	05	10.02042	15	16	53.00	-15	22	59.5	MPC 3348	020
1295		1967	05	10.03462	15	16	52.30	-15	22	44.9	MPC 3348	020
1298		1966	12	17.07879	07	23	19.22	+24	25	44.3	MPC 3348	020
1298		1966	12	17.10684	07	23	18.24	+24	25	45.2	MPC 3348	020
1298		1966	12	23.13531	07	18	51.75	+24	25	54.2	MPC 3348	020
1298		1966	12	23.15678	07	18	50.78	+24	25	52.1	MPC 3348	020
1298		1969	05	13.91667	14	47	20.14	-23	50	01.5	MPC 3451	020
1298		1969	05	13.92779	14	47	19.44	-23	49	49.9	MPC 3451	020

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IDENTIFICATION CHANGES.

Continuation to MPC 8952-8960.

Object		Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
A903 VC	*	1903 11	14.81069	03 17 22.88	+13 31 57.5	A903 UF		024
1952 OK1	*	1952 07	28.31946	22 12.7	-09 43	1952 OQ	16.4	760
1971 SB4	*	1971 09	22.88735	23 25 17.94	-16 44 49.2	1971 QA1	15.5	095
1971 TK3	*	1971 10	11.79464	23 26 06.72	+05 03 57.2	1971 SD1	16.5	095
1971 TL3	*	1971 10	13.82697	00 14 39.78	-03 31 48.6	1971 SM2	17.0	095
1971 TL3		1971 10	14.82327	00 13 46.04	-03 32 35.8	1971 SM2	17.0	095
1971 TL3		1971 10	15.93954	00 12 47.25	-03 33 28.2	1971 SM2	17.0	095
1971 UR4	*	1971 10	16.82314	23 10 56.05	-18 28 10.8	1971 QA1	15.5	095
1971 VC1	*	1971 11	11.87252	02 43 12.22	+29 19 53.0	1971 TW2	17.0	095
1971 VD1	*	1971 11	11.87252	02 48 27.48	+31 18 10.0	1971 TV2	17.0	095
1972 RD4	*	1972 09	04.93183	22 41 15.83	-08 16 28.6	1972 QG	16.5	095
1972 RD4		1972 09	08.92014	22 37 24.86	-08 41 39.3	1972 QG	16.5	095
1972 RE4	*	1972 09	04.93183	22 43 39.39	-07 02 53.9	1972 QJ	16.5	095
1972 TY10	*	1972 10	04.79078	22 21 02.56	-09 36 59.0	1972 QG	16.5	095
1972 TZ10	*	1972 10	04.79078	22 29 09.83	-10 35 41.2	1972 QJ	16.5	095
1972 TA11	*	1972 10	05.90889	01 06 10.59	+03 26 41.0	1972 RH2	16.5	095
1972 TA11		1972 10	13.85679	01 00 17.62	+01 46 03.5	1972 RH2	16.5	095
1972 TB11	*	1972 10	05.90889	01 11 46.90	+06 21 00.5	1972 RO2	17.0	095
1972 TB11		1972 10	13.85679	01 05 22.60	+05 31 22.8	1972 RO2	17.0	095
1972 XR2	*	1972 12	02.78344	02 26 04.74	+03 23 43.6	1972 TC2	16.5	095
1972 XS2	*	1972 12	02.78344	02 29 49.27	+04 39 17.2	1972 TE2	16.5	095
1972 XS2		1972 12	06.76241	02 27 51.59	+04 53 28.0	1972 TE2	17.0	095
1973 CL	*	1973 02	03.91065	08 48 53.18	+23 23 46.3	1972 YW	16.5	095
1974 SF5	*	1974 09	20.93088	00 13 38.66	+13 09 59.7	1974 RE1	17.0	095
1974 SG5	*	1974 09	22.93395	00 10 50.48	+12 55 42.6	1974 RE1	16.5	095
1974 XA1	*	1974 12	10.87212	04 05 12.85	+15 56 17.2	1974 VF1	17.0	095

1974 XB1 *	1974 12 10.87212	04 07 49.55	+21 12 37.3	1974 VH1	17.5	095
1974 XC1 *	1974 12 10.87212	04 13 42.98	+16 22 09.2	1974 VO1	17.0	095
1975 VK10*	1975 11 06.81727	01 22 58.20	+04 46 52.6	1975 TO3	17.0	095
1975 XF7 *	1975 12 01.77429	01 55 10.54	+06 54 44.9	1975 VQ3	15.5	095
1975 XF7	1975 12 03.76628	01 54 37.86	+07 02 56.7	1975 VQ3	15.5	095

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DOUBLE DESIGNATIONS.

The following double designations, by B. G. Marsden, are a continuation of those on MPC 8482.

1941 WC = 1941 WG1	1956 PE = 1956 PL	1964 RA = 1964 RO
1968 OU = 1968 ON1	1970 EQ = 1970 EN1	1974 TT = 1974 UP
1974 VD3 = 1974 WN1	1975 TZ3 = 1975 TP6	

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OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

010 Caussols. 0.9-m Schmidt. Measured by D. Benest and H. Rickman.
026 Zimmerwald. Observer P. Wild.
046 Klet. Observer A. Mrkos.
051 South African Astronomical Observatory, Cape Town. Observer J. Churms. Four reference stars, reduction using Perth 70 Catalog.
056 Skalnate Pleso. Observers L. Kornos and P. Rychtarcik.
372 Geisei. Observer T. Seki.
385 Nihondaira Observatory. Observer T. Urata.
415 Kambah, near Canberra. Observer D. Herald.
474 Mt. John University Observatory. Observer A. C. Gilmore. Measured by P. M. Kilmartin (assisted by R. McIntosh and W. M. Kissling).
657 Victoria. Observers D. D. Balam and F. K. Yeomans.
675 Palomar. 1.2-m Schmidt. Observer J. Gibson.
688 Lowell Observatory, Anderson Mesa Station. Observers S. J. Bus and E. Bowell. Measured by Bowell.
707 Chamberlin Observatory field station. Observer E. Everhart.
801 Oak Ridge Observatory. Observers R. E. McCrosky, G. Schwartz and C.-Y. Shao (assisted by C. M. Bardwell, D. W. E. Green and B. G. Marsden).
807 Cerro Tololo. 4-m reflector, prime-focus CCD detector. Observers J. T. Clarke, J. Brodie and P. McCarthy.
993 Woolston. Observers M. Dykes and A. Kimber (assisted by H. B. Ridley and R. L. Waterfield). Measured by P. Birtwhistle.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
		Periodic Comet Boethin					
/1975 I	1975	02 05.40422	01 13 23.85	+12 20 06.6	10.0T	1	385
/1975 I	1975	02 05.40833	01 13 25.06	+12 20 15.8		1	385
		Periodic Comet Slaughter-Burnham					
/1981 XVIII	1981	12 25.74516	00 56 46.22	+14 49 36.2			010
/1981 XVIII	1982	01 20.75972	01 24 19.41	+17 03 29.6			010
		Comet Bowell (1982 I)					
/1982 I	1984	07 26.30629	23 36 01.14	-04 11 00.5			801

Periodic Comet Kopff

/1982k	1983	06	19.03526	15	22	56.73	-10	14	53.0		993

Periodic Comet Crommelin

/1983n	1984	05	26.39455	09	36	49.13	-18	25	51.4		474
/1983n	1984	05	27.35289	09	39	43.25	-18	23	54.0		474
/1983n	1984	05	27.39572	09	39	50.84	-18	23	49.1		474

Comet Shoemaker (1983p)

/1983p	1984	06	26.55255	22	43	10.40	-42	29	17.9		474
/1983p	1984	06	26.56916	22	43	09.26	-42	29	40.4		474

Periodic Comet Clark

/1983w	1984	05	29.68311	20	12	30.79	-30	33	38.7		474
/1983w	1984	05	29.69642	20	12	32.08	-30	33	48.2		474

Periodic Comet Giacobini-Zinner

/1984e	1984	07	21.02708	13	57	31.6	+04	43	48	23 N	807

Comet Shoemaker (1984f)

/1984f	1984	07	19.25896	15	40	24.90	+08	59	45.1		657
/1984f	1984	07	21.87933	15	38	23.73	+08	37	01.9	14.5T	046
/1984f	1984	07	21.89345	15	38	23.24	+08	36	55.6		046
/1984f	1984	07	22.87343	15	37	39.67	+08	28	19.8	14.5T	046
/1984f	1984	07	22.88477	15	37	39.29	+08	28	16.6		046
/1984f	1984	07	23.26701	15	37	22.64	+08	24	49.4		657
/1984f	1984	07	24.10028	15	36	46.86	+08	17	27.3		801
/1984f	1984	07	25.26944	15	35	57.52	+08	06	59.1		657
/1984f	1984	07	29.07692	15	33	26.52	+07	32	30.3		801
/1984f	1984	07	29.90119	15	32	55.65	+07	24	52.6		046
/1984f	1984	07	29.91543	15	32	55.05	+07	24	45.9		046
/1984f	1984	07	30.86762	15	32	20.31	+07	15	57.8		046
/1984f	1984	07	30.88179	15	32	19.67	+07	15	50.9		046

Periodic Comet Wolf-Harrington

/1984g	1984	07	27.41862	04	55	54.81	+28	49	50.9		657
/1984g	1984	07	27.44039	04	55	58.79	+28	49	45.8		657
/1984g	1984	07	29.41892	05	02	07.96	+28	45	39.3		657
/1984g	1984	07	29.43681	05	02	11.58	+28	45	31.3		657
/1984g	1984	07	31.34390	05	08	07.79	+28	40	33.2		801

Comet Austin (1984i)

/1984i	1984	07	12.77222	07	25	46.67	-29	29	27.0		474
/1984i	1984	07	12.78299	07	26	05.99	-29	27	18.6		474
/1984i	1984	07	18.34549	09	10	31.92	-13	30	37.7		415
/1984i	1984	07	20.35280	09	29	06.18	-09	40	08.5		415
/1984i	1984	07	20.35587	09	29	07.23	-09	39	50.0		415
/1984i	1984	07	31.34867	10	09	24.64	+02	26	27.5	2	415
/1984i	1984	07	31.35123	10	09	24.71	+02	26	30.6	2	415
/1984i	1984	08	01.34919	10	10	15.07	+03	13	56.7		415
/1984i	1984	08	01.35083	10	10	15.16	+03	14	00.8		415

Periodic Comet Takamizawa

/1984j	1984	07	06.02760	21	13	12.88	-13	11	03.8	16 T 3	026
/1984j	1984	07	08.04375	21	13	48.64	-13	35	08.5	13 T 4	026
/1984j	1984	07	26.68125	21	13	33.00	-17	47	56.0	6.5T 5	372
/1984j	1984	08	02.89650	21	11	35.53	-19	27	19.2	9.5T	046
/1984j	1984	08	02.90108	21	11	35.41	-19	27	23.3		046
/1984j	1984	08	03.01560	21	11	32.99	-19	28	55.2		046

/1984j	1984	08	03.01878	21	11	32.85	-19	28	57.4		046
/1984j	1984	08	03.50092	21	11	24.80	-19	35	04.0		415
/1984j	1984	08	03.86204	21	11	18.10	-19	40	04.2		056
/1984j	1984	08	03.92153	21	11	16.77	-19	40	50.5		056
/1984j	1984	08	03.94865	21	11	16.25	-19	41	12.9		046
/1984j	1984	08	03.95027	21	11	16.24	-19	41	14.6		046
/1984j	1984	08	04.02706	21	11	14.46	-19	42	14.8		046
/1984j	1984	08	04.02891	21	11	14.50	-19	42	15.8		046
/1984j	1984	08	04.92558	21	10	58.39	-19	53	54.5		056
/1984j	1984	08	04.95902	21	10	57.65	-19	54	19.3		056
/1984j	1984	08	05.99583	21	10	38.72	-20	07	32.1	8.0T	6 993
/1984j	1984	08	06.07012	21	10	36.92	-20	08	37.1		985
/1984j	1984	08	06.72240	21	10	25.08	-20	16	43.4	10 T	372
/1984j	1984	08	06.74253	21	10	24.73	-20	16	58.9		372
/1984j	1984	08	08.74965	21	09	48.22	-20	41	42.3	10 T	372
/1984j	1984	08	21.43995	21	06	46.64	-22	52	34.1	7	675
/1984j	1984	08	22.19097	21	06	41.12	-22	58	46.5		688
/1984j	1984	08	22.24061	21	06	40.45	-22	59	15.2		688
/1984j	1984	08	28.93484	21	06	14.22	-23	46	11.9		051
/1984j	1984	08	28.94664	21	06	14.24	-23	46	15.8		051

Periodic Comet Arend-Rigaux

/1984k	1984	08	07.44239	03	48	17.84	+00	47	55.2	18.5N	675
/1984k	1984	08	08.41739	03	50	34.31	+00	49	11.0		675
/1984k	1984	08	08.76667	03	51	23.04	+00	49	36.4	18.2N	372
/1984k	1984	08	09.41667	03	52	54.39	+00	50	19.9	19 N	8 707

Periodic Comet Gehrels 3

/1984l	1984	08	07.45975	05	12	24.04	+22	56	23.8	20 N	675
/1984l	1984	08	08.45489	05	13	32.65	+22	57	31.7	20 N	675

Note 1: remeasurement of positions on IAUC 2748. 2: very poor seeing. 3: distinct nucleus in very tenuous coma. 4: bright asymmetric coma. 5: correction to MPC 8964. 6: comet very strongly condensed but clearly fuzzy around the circumference, diameter 2′.5, faint tail about 3′ long in p.a. 225 . 7: 9" jet at p.a. 80 -85 . 8: faint, uniform, soft, diffuse, round image about 9" in diameter.

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

Plates taken with the 0.6-m Maksutov reflector. Contact: A. Mrkos, Department of Astronomy and Astrophysics, Charles University, Svedska 8, C-15000 Prague 5, Czechoslovakia.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
10	1984	08 03.90565	20 45 04.55	-15 18 17.2		046
10	1984	08 03.91983	20 45 03.84	-15 18 19.0		046
16	1984	07 30.93903	20 56 54.00	-15 33 39.2		046
16	1984	07 30.95338	20 56 53.28	-15 33 42.8		046
16	1984	08 03.90565	20 53 40.37	-15 51 20.0		046
16	1984	08 03.91983	20 53 39.60	-15 51 23.0		046
107	1984	07 30.01346	21 28 16.22	-06 37 21.6		046
107	1984	07 30.02758	21 28 15.65	-06 37 24.8		046
211	1984	07 30.93903	20 55 54.05	-13 01 41.4		046
211	1984	07 30.95338	20 55 53.35	-13 01 43.6		046
382	1984	07 29.97764	21 26 33.57	-14 39 58.1		046
382	1984	07 29.99286	21 26 32.81	-14 39 59.5		046
382	1984	07 30.97919	21 25 44.26	-14 41 31.3		046
382	1984	07 30.99331	21 25 43.40	-14 41 33.4		046

427		1984	07	29.97764	21	25	01.95	-12	36	59.5		046
427		1984	07	29.99286	21	25	01.24	-12	37	00.9		046
427		1984	07	30.97919	21	24	14.09	-12	38	22.6		046
427		1984	07	30.99331	21	24	13.38	-12	38	24.5		046
1003		1984	07	31.01808	21	49	19.41	-13	13	29.6		046
1003		1984	07	31.03226	21	49	18.74	-13	13	33.7		046
1003		1984	08	01.00419	21	48	40.17	-13	17	18.7		046
1003		1984	08	01.01900	21	48	39.28	-13	17	20.2		046
1003		1984	08	02.99963	21	47	19.19	-13	25	06.2		046
1003		1984	08	03.96334	21	46	39.48	-13	28	56.2		046
1003		1984	08	03.97804	21	46	38.79	-13	28	59.4		046
1067		1984	07	30.01346	21	27	53.85	-07	02	39.7		046
1067		1984	07	30.02758	21	27	53.18	-07	02	39.8		046
1076		1984	08	03.99755	22	16	16.80	-10	48	50.2		046
1076		1984	08	04.01167	22	16	16.01	-10	48	56.2		046
1144		1984	07	21.95120	20	18	34.40	-11	52	08.2		046
1144		1984	07	21.96260	20	18	33.93	-11	52	11.1		046
1144		1984	07	22.94773	20	17	55.26	-11	55	47.9		046
1144		1984	07	22.96185	20	17	54.68	-11	55	51.8		046
1144		1984	07	24.95832	20	16	35.82	-12	03	24.3		046
1144		1984	07	24.97279	20	16	35.15	-12	03	28.1		046
1200		1984	07	30.01346	21	29	48.57	-07	55	28.0		046
1200		1984	07	30.02758	21	29	47.98	-07	55	32.2		046
1269		1984	08	03.99755	22	14	26.90	-11	43	42.0		046
1269		1984	08	04.01167	22	14	26.52	-11	43	45.0		046
1539		1984	07	31.01808	21	49	22.55	-12	59	59.7		046
1539		1984	07	31.03226	21	49	21.75	-13	00	05.4		046
1539		1984	08	01.00419	21	48	44.08	-13	03	56.9		046
1539		1984	08	01.01900	21	48	43.11	-13	04	00.7		046
1539		1984	08	02.98539	21	47	24.20	-13	12	01.0		046
1539		1984	08	02.99963	21	47	23.56	-13	12	04.3		046
1539		1984	08	03.96334	21	46	43.64	-13	16	04.3		046
1539		1984	08	03.97804	21	46	43.02	-13	16	07.7		046
1691		1984	08	03.99755	22	07	45.95	-10	41	43.7		046
1691		1984	08	04.01167	22	07	45.30	-10	41	46.7		046
1728		1984	07	22.90826	20	21	48.99	-07	49	32.4		046
1728		1984	07	22.92238	20	21	48.25	-07	49	33.8		046
2017		1984	07	30.01346	21	35	22.51	-07	40	14.0		046
2017		1984	07	30.02758	21	35	21.98	-07	40	18.0		046
2121		1984	07	30.93903	20	57	50.24	-14	23	58.6		046
2121		1984	07	30.95338	20	57	49.51	-14	24	05.5		046
2121		1984	08	03.90565	20	54	39.02	-14	55	43.8		046
2121		1984	08	03.91983	20	54	38.31	-14	55	51.5		046
2162		1984	07	29.97764	21	28	02.47	-15	30	00.2		046
2162		1984	07	29.99286	21	28	01.44	-15	30	05.5		046
2586		1984	07	21.95120	20	24	10.57	-13	30	40.5		046
2586		1984	07	21.96260	20	24	09.96	-13	30	40.0		046
2586		1984	07	22.94773	20	23	16.67	-13	35	30.7		046
2586		1984	07	22.96185	20	23	15.81	-13	35	34.1		046
2586		1984	07	24.95832	20	21	27.06	-13	45	28.6		046
2586		1984	07	24.97279	20	21	26.10	-13	45	27.9		046
2718		1984	08	03.99755	22	10	29.51	-13	50	13.0		046
2718		1984	08	04.01167	22	10	28.94	-13	50	15.6		046
1979	SZ9	1984	08	03.99755	22	07	36.02	-11	43	11.2	16.8	046
1979	SZ9	1984	08	04.01167	22	07	35.48	-11	43	14.4		046
1981	WU	1984	08	01.00419	21	49	53.21	-12	05	03.1	17.0	046
1981	WU	1984	08	01.01900	21	49	52.33	-12	05	06.9		046
1981	WU	1984	08	02.98539	21	48	20.83	-12	16	55.3	1	046
1981	WU	1984	08	02.99963	21	48	20.24	-12	16	57.9		046

1981 WU		1984	08	03.96334	21	47	33.96	-12	22	56.2		046
1981 WU		1984	08	03.97804	21	47	33.11	-12	23	03.2		046
1984 OA	*	1984	07	21.95120	20	14	57.12	-12	56	07.4	16.0	046
1984 OA		1984	07	21.96260	20	14	56.65	-12	56	14.9		046
1984 OA		1984	07	22.94773	20	14	09.91	-13	09	05.4		046
1984 OA		1984	07	22.96185	20	14	09.21	-13	09	17.2		046
1984 OA		1984	07	24.95832	20	12	33.29	-13	35	45.9		046
1984 OA		1984	07	24.97279	20	12	32.05	-13	35	57.3		046
1984 OA		1984	07	29.93759	20	08	32.42	-14	43	32.8		046
1984 OA		1984	07	29.95200	20	08	31.74	-14	43	41.6		046
1984 OB	*	1984	07	22.94773	20	24	19.66	-12	10	35.7	17.2	046
1984 OB		1984	07	22.96185	20	24	19.01	-12	10	43.7		046
1984 OC	*	1984	07	30.93903	20	51	42.07	-14	56	57.5	16.8	046
1984 OC		1984	07	30.95338	20	51	41.15	-14	57	02.0		046
1984 OC		1984	08	03.90565	20	47	55.47	-15	22	54.5		046
1984 OC		1984	08	03.91983	20	47	54.58	-15	23	00.5		046
1984 OD	*	1984	07	31.01808	21	43	07.43	-11	54	34.0	16.6	046
1984 OD		1984	07	31.03226	21	43	07.03	-11	54	48.5		046
1984 OD		1984	08	01.00419	21	42	32.42	-12	17	55.2		046
1984 OD		1984	08	01.01900	21	42	31.90	-12	18	08.1		046
1984 OD		1984	08	02.98539	21	41	18.87	-13	05	15.5	2	046
1984 OD		1984	08	02.99963	21	41	18.25	-13	05	34.1	2	046
1984 OD		1984	08	03.96334	21	40	40.98	-13	28	57.7		046
1984 OD		1984	08	03.97804	21	40	40.36	-13	29	18.4		046
1984 OE	*	1984	07	31.01808	21	43	35.59	-11	18	57.9	17.0	046
1984 OE		1984	07	31.03226	21	43	34.65	-11	19	05.4		046
1984 OE		1984	08	01.00419	21	42	54.59	-11	22	55.3		046
1984 OE		1984	08	01.01900	21	42	53.83	-11	22	57.1		046
1984 OE		1984	08	03.96334	21	40	45.81	-11	35	21.1		046
1984 OE		1984	08	03.97804	21	40	45.32	-11	35	25.4		046
1984 OF	*	1984	07	31.01808	21	48	12.42	-11	28	50.2	17.0	046
1984 OF		1984	07	31.03226	21	48	11.82	-11	28	51.2		046
1984 OF		1984	08	01.00419	21	47	32.97	-11	31	46.6		046
1984 OF		1984	08	01.01900	21	47	32.30	-11	31	49.4		046
1984 OF		1984	08	02.98539	21	46	11.24	-11	37	55.0	1	046
1984 OF		1984	08	02.99963	21	46	10.74	-11	37	55.0		046
1984 OF		1984	08	03.96334	21	45	29.59	-11	41	03.9		046
1984 OF		1984	08	03.97804	21	45	28.97	-11	41	07.3		046
1984 OG	*	1984	07	31.01808	21	52	22.40	-11	37	14.8	17.0	046
1984 OG		1984	07	31.03226	21	52	21.59	-11	37	17.6		046
1984 OG		1984	08	01.00419	21	51	44.13	-11	41	41.0		046
1984 OG		1984	08	01.01900	21	51	43.43	-11	41	44.5		046
1984 OG		1984	08	02.98539	21	50	24.50	-11	50	49.0		046
1984 OG		1984	08	02.99963	21	50	23.92	-11	50	52.9		046
1984 OG		1984	08	03.96334	21	49	44.39	-11	55	22.8		046
1984 OG		1984	08	03.97804	21	49	43.85	-11	55	27.9		046
1984 PA	*	1984	08	03.96334	21	46	09.11	-11	38	19.6	17.0	046
1984 PA		1984	08	03.97804	21	46	08.24	-11	38	17.6		046
1984 PB	*	1984	08	03.99755	22	10	36.89	-14	00	34.1	16.4	046
1984 PB		1984	08	04.01167	22	10	36.35	-14	00	37.8		046
1984 PC	*	1984	08	03.99755	22	17	15.18	-10	46	22.8	16.4	046
1984 PC		1984	08	04.01167	22	17	14.48	-10	46	24.3		046

Note 1: image faint. 2: interference from clouds.

OBSERVATIONS MADE AT GEISEI BY T. SEKI.

Contact: T. Seki, Kamimachi 2-9-35, Kochi, Japan.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1984 QB	*	1984 08	24.72882	22 58 17.10	+03 43 38.7	16	372
1984 QB		1984 08	28.70591	22 54 35.31	+03 48 52.2	16	372

1984 QB		1984	09	02.65972	22	49	43.6	+03	51	17	16	372
1984 QB		1984	09	02.73368	22	49	39.0	+03	51	16		372
1984 QC	*	1984	08	24.72882	23	01	59.79	+03	54	23.4	15	372
1984 QC		1984	08	28.70591	22	58	48.21	+03	52	01.2	14	372
1984 QC		1984	09	02.65972	22	54	42.15	+03	46	27.5	14	372
1984 QC		1984	09	02.73368	22	54	38.22	+03	46	20.4		372

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

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

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1981 EO11	1981	03 02.62373	11 49 32.07	-02 22 02.8		413
1981 EO11	1981	03 03.61076	11 48 47.25	-02 18 29.8		413
1981 EG45*	1981	03 01.57987	11 44 07.67	-04 15 53.4	19.0V	413
1981 EG45	1981	03 07.70735	11 38 41.59	-03 53 04.4		413
1981 EG45	1981	03 11.54742	11 35 03.80	-03 35 49.7		413
1981 EG45	1981	03 11.58909	11 35 01.88	-03 35 41.2		413
1981 EH45*	1981	03 01.59302	12 08 15.99	-10 07 53.7	20.0V	413
1981 EH45	1981	03 06.66426	12 04 06.92	-09 57 00.5		413
1981 EH45	1981	03 06.70593	12 04 05.14	-09 56 53.9		413
1981 EH45	1981	03 08.68165	12 02 21.52	-09 51 16.3		413
1981 EH45	1981	03 08.72332	12 02 19.54	-09 51 09.0		413
1981 EH45	1981	03 12.61890	11 58 47.68	-09 37 54.4		413
1981 EJ45*	1981	03 01.63816	12 09 51.95	-07 50 32.5	20.0V	413
1981 EJ45	1981	03 08.72332	12 05 13.51	-07 28 27.0		413
1981 EJ45	1981	03 12.58070	12 02 30.35	-07 14 08.5		413
1981 EK45*	1981	03 01.63816	12 10 08.25	-05 28 03.8	19.5V	413
1981 EK45	1981	03 06.70593	12 05 48.01	-05 15 59.0		413
1981 EK45	1981	03 08.68165	12 03 59.69	-05 10 16.6		413
1981 EK45	1981	03 12.58070	12 00 16.99	-04 57 37.7		413
1981 EK45	1981	03 12.61890	12 00 14.76	-04 57 30.7		413
1981 EL45*	1981	03 01.59302	12 10 43.87	-11 03 29.3	18.5V	413
1981 EL45	1981	03 08.68165	12 05 34.51	-10 42 07.4		413
1981 EL45	1981	03 08.72332	12 05 32.86	-10 41 58.8		413
1981 EL45	1981	03 12.61890	12 02 22.29	-10 25 21.9		413
1981 EL45	1981	04 09.50909	11 39 43.84	-07 26 04.8		413
1981 EL45	1981	04 09.54382	11 39 42.52	-07 25 51.9		413
1981 EM45*	1981	03 01.59302	12 10 45.89	-08 49 25.8	20.0V	413
1981 EM45	1981	03 08.68165	12 05 06.42	-08 42 16.3		413
1981 EM45	1981	03 08.72332	12 05 04.60	-08 42 14.3		413
1981 EM45	1981	03 12.61890	12 01 42.82	-08 35 29.5		413
1981 EM45	1981	04 09.50909	11 37 25.37	-07 11 04.7		413
1981 EM45	1981	04 09.54382	11 37 23.89	-07 10 57.9		413
1981 EN45*	1981	03 01.59302	12 11 44.95	-05 44 07.0	19.5V	413
1981 EN45	1981	03 08.68165	12 05 12.91	-05 13 29.7		413
1981 EN45	1981	03 08.72332	12 05 10.95	-05 13 21.7		413
1981 EN45	1981	03 12.58070	12 01 20.98	-04 53 43.5		413
1981 EN45	1981	03 12.61890	12 01 18.90	-04 53 32.6		413
1981 EN45	1981	04 09.54382	11 34 49.96	-02 12 53.0		413
1981 EO45*	1981	03 01.59302	12 16 16.94	-08 25 22.6	19.5V	413
1981 EO45	1981	03 08.72332	12 11 03.96	-07 51 13.2		413
1981 EO45	1981	03 12.61890	12 07 50.19	-07 28 06.3		413
1981 EP45*	1981	03 01.59302	12 17 31.21	-06 43 26.4	19.5V	413
1981 EP45	1981	03 01.63816	12 17 29.49	-06 43 28.5		413
1981 EP45	1981	03 08.68165	12 12 14.11	-06 46 25.9		413
1981 EP45	1981	03 12.58070	12 09 02.33	-06 45 48.2		413

1981	EP45	1981	03	12.61890	12	09	00.41	-06	45	47.8	413
1981	EP45	1981	04	08.55338	11	45	36.10	-06	13	19.4	413
1981	EP45	1981	04	08.58810	11	45	34.34	-06	13	16.5	413
1981	EP45	1981	04	09.50909	11	44	51.50	-06	11	50.2	413
1981	EP45	1981	04	09.54382	11	44	49.83	-06	11	45.9	413
1981	EQ45*	1981	03	01.63816	12	24	15.61	-05	35	30.4	20.0V 413
1981	EQ45	1981	03	08.72332	12	19	41.62	-04	47	43.6	413
1981	EQ45	1981	03	12.61890	12	16	47.03	-04	17	34.6	413
1981	ER45*	1981	03	01.59302	12	24	50.17	-06	27	23.4	19.0V 413
1981	ER45	1981	03	01.63816	12	24	48.67	-06	27	04.7	413
1981	ER45	1981	03	08.68165	12	20	20.49	-05	32	37.8	413
1981	ER45	1981	03	08.72332	12	20	18.73	-05	32	17.1	413
1981	ER45	1981	03	12.58070	12	17	26.11	-04	58	03.6	413
1981	ER45	1981	04	05.55430	11	57	52.03	-00	59	21.8	413
1981	ER45	1981	04	05.58312	11	57	50.48	-00	59	02.5	413
1981	ES45*	1981	03	01.59302	12	25	51.20	-09	10	14.2	18.5V 413
1981	ES45	1981	03	01.63816	12	25	50.10	-09	10	04.7	413
1981	ES45	1981	03	08.72332	12	21	55.33	-08	35	51.1	413
1981	ES45	1981	03	12.61890	12	19	32.81	-08	14	29.9	413
1981	ET45*	1981	03	01.59302	12	26	00.00	-08	15	13.0	18.5V 413
1981	ET45	1981	03	08.68165	12	22	02.36	-07	19	57.4	413
1981	ET45	1981	03	08.72332	12	22	00.96	-07	19	38.8	413
1981	ET45	1981	03	12.61890	12	19	33.63	-06	46	02.6	413
1981	EU45*	1981	03	01.59302	12	27	29.60	-09	43	34.6	18.5V 413
1981	EU45	1981	03	08.72332	12	23	27.93	-08	24	29.6	413
1981	EU45	1981	03	12.61890	12	20	54.38	-07	36	29.1	413
1981	EV45*	1981	03	01.59302	12	28	12.84	-06	51	33.9	19.0V 413
1981	EV45	1981	03	01.63816	12	28	11.36	-06	51	27.4	413
1981	EV45	1981	03	08.72332	12	23	48.01	-06	31	35.4	413
1981	EV45	1981	03	12.58070	12	21	04.93	-06	18	00.0	413
1981	EV45	1981	04	09.54382	11	59	02.41	-04	06	46.9	413
1981	EW45*	1981	03	01.63816	12	28	26.82	-05	36	21.1	19.0V 413
1981	EW45	1981	03	08.72332	12	24	29.12	-05	06	55.9	413
1981	EW45	1981	03	12.61890	12	22	04.97	-04	48	49.8	413
1981	EX45*	1981	03	01.63816	12	28	45.66	-08	27	44.0	20.0V 413
1981	EX45	1981	03	08.72332	12	24	42.60	-07	42	50.7	413
1981	EX45	1981	03	12.58070	12	22	02.02	-07	13	17.6	413
1981	EY45*	1981	03	01.59302	12	29	45.41	-07	31	02.7	18.5V 413
1981	EY45	1981	03	01.63816	12	29	44.14	-07	30	56.9	413
1981	EY45	1981	03	06.66426	12	26	38.56	-07	17	49.7	413
1981	EY45	1981	03	08.72332	12	25	17.42	-07	11	42.9	413
1981	EZ45*	1981	03	02.62373	11	40	53.91	+03	28	52.1	18.5V 413
1981	EZ45	1981	03	03.56736	11	40	16.95	+03	34	08.8	413
1981	EZ45	1981	03	07.60751	11	37	35.24	+03	57	01.5	413
1981	EZ45	1981	03	07.64918	11	37	33.45	+03	57	14.6	413
1981	EZ45	1981	04	08.53962	11	17	11.63	+06	43	01.4	413
1981	EZ45	1981	04	11.56596	11	15	44.95	+06	54	40.1	413
1981	EA46*	1981	03	02.57859	11	41	17.05	+01	49	06.1	18.5V 413
1981	EA46	1981	03	02.62373	11	41	14.84	+01	49	17.7	413
1981	EA46	1981	03	03.56736	11	40	27.80	+01	53	57.7	413
1981	EA46	1981	03	07.64918	11	36	55.12	+02	14	54.9	413
1981	EA46	1981	04	08.50490	11	10	42.46	+04	49	54.2	413
1981	EB46*	1981	03	02.62373	11	41	32.39	+02	20	19.9	19.0V 413
1981	EB46	1981	03	03.61076	11	40	37.65	+02	27	06.3	413
1981	EB46	1981	03	07.60751	11	36	48.71	+02	55	05.3	413
1981	EC46*	1981	03	02.62373	11	41	39.50	+02	59	55.1	20.0V 413
1981	EC46	1981	03	03.56736	11	40	56.53	+03	04	09.9	413
1981	EC46	1981	03	03.61076	11	40	54.61	+03	04	18.9	413
1981	EC46	1981	03	07.60751	11	37	49.57	+03	22	29.8	413

1981	ED46*	1981	03	02.57859	11	41	51.87	-00	28	10.8	19.5V 413
1981	ED46	1981	03	07.60751	11	37	48.01	-00	06	24.2	413
1981	ED46	1981	03	11.60352	11	34	27.81	+00	12	01.8	413
1981	EE46*	1981	03	02.57859	11	42	16.98	-02	39	38.4	20.0V 413
1981	EE46	1981	03	02.62373	11	42	15.60	-02	39	32.9	413
1981	EE46	1981	03	03.56736	11	41	34.71	-02	36	23.1	413
1981	EE46	1981	03	07.60751	11	38	36.03	-02	22	15.7	413
1981	EE46	1981	03	07.64918	11	38	34.39	-02	22	08.4	413
1981	EE46	1981	03	15.64523	11	32	27.83	-01	51	11.4	413
1981	EE46	1981	03	15.68342	11	32	26.21	-01	51	03.6	413
1981	EF46*	1981	03	02.57859	11	43	21.46	-02	00	04.2	19.0V 413
1981	EF46	1981	03	03.56736	11	42	27.50	-01	56	52.4	413
1981	EF46	1981	03	11.64518	11	34	32.02	-01	26	11.1	413
1981	EG46*	1981	03	02.57859	11	44	04.38	+00	24	14.6	18.0V 413
1981	EG46	1981	03	02.62373	11	44	02.03	+00	24	17.2	413
1981	EG46	1981	03	03.61076	11	43	11.53	+00	26	22.7	413
1981	EG46	1981	03	07.60751	11	39	38.06	+00	35	46.0	413
1981	EG46	1981	03	11.60352	11	35	53.00	+00	46	23.8	413
1981	EG46	1981	03	11.64518	11	35	50.59	+00	46	29.7	413
1981	EH46*	1981	03	02.62373	11	44	48.42	-00	50	41.0	20.0V 413
1981	EH46	1981	03	03.61076	11	44	06.12	-00	43	51.1	413
1981	EH46	1981	03	11.64518	11	37	59.06	+00	15	40.2	413
1981	EJ46*	1981	03	02.57859	11	45	41.85	-00	50	44.7	19.5V 413
1981	EJ46	1981	03	03.56736	11	44	58.54	-00	45	39.5	413
1981	EJ46	1981	03	07.60751	11	41	54.87	-00	23	51.0	413
1981	EJ46	1981	03	07.64918	11	41	52.98	-00	23	39.2	413
1981	EJ46	1981	03	11.64518	11	38	44.45	-00	00	56.1	413
1981	EK46*	1981	03	02.57859	11	46	07.15	-02	26	27.6	20.0V 413
1981	EK46	1981	03	07.60751	11	42	49.18	-01	44	54.6	413
1981	EK46	1981	03	07.64918	11	42	47.61	-01	44	34.7	413
1981	EK46	1981	03	11.64518	11	39	59.62	-01	09	13.1	413
1981	EL46*	1981	03	02.62373	11	46	46.51	+02	48	10.7	19.5V 413
1981	EL46	1981	03	03.56736	11	46	07.73	+02	59	10.1	413
1981	EL46	1981	03	07.60751	11	43	15.50	+03	46	31.0	413
1981	EM46*	1981	03	02.57859	11	46	53.89	-01	01	11.7	19.0V 413
1981	EM46	1981	03	02.62373	11	46	51.52	-01	00	57.5	413
1981	EM46	1981	03	07.60751	11	42	16.63	-00	31	56.0	413
1981	EM46	1981	03	11.64518	11	38	23.56	-00	06	50.3	413
1981	EN46*	1981	03	02.62373	11	47	26.60	-01	29	00.1	20.0V 413
1981	EN46	1981	03	07.64918	11	43	06.82	-01	13	53.4	413
1981	EN46	1981	03	11.64518	11	39	25.15	-00	59	35.4	413
1981	EO46*	1981	03	02.62373	11	49	03.02	+02	31	14.2	19.5V 413
1981	EO46	1981	03	03.56736	11	48	26.09	+02	35	50.9	413
1981	EO46	1981	03	03.61076	11	48	24.24	+02	36	05.5	413
1981	EO46	1981	03	07.60751	11	45	39.98	+02	56	30.5	413
1981	EO46	1981	03	11.60352	11	42	48.71	+03	17	33.0	413
1981	EP46*	1981	03	02.57859	11	49	36.49	+01	35	52.8	19.0V 413
1981	EP46	1981	03	03.56736	11	48	42.91	+01	39	34.5	413
1981	EP46	1981	03	07.60751	11	44	59.65	+01	55	06.7	413
1981	EP46	1981	03	11.64518	11	41	11.47	+02	11	06.0	413
1981	EQ46*	1981	03	02.57859	11	51	29.35	+01	47	22.8	19.0V 413
1981	EQ46	1981	03	02.62373	11	51	27.29	+01	47	37.0	413
1981	EQ46	1981	03	07.64918	11	47	43.40	+02	18	14.7	413
1981	EQ46	1981	03	11.60352	11	44	40.09	+02	42	58.5	413
1981	EQ46	1981	04	08.50490	11	24	32.55	+05	21	31.1	413
1981	EQ46	1981	04	08.53962	11	24	31.64	+05	21	38.9	413
1981	ER46*	1981	03	02.57859	11	52	11.95	-00	58	16.7	20.0V 413
1981	ER46	1981	03	03.56736	11	51	24.69	-00	52	36.3	413
1981	ER46	1981	03	07.60751	11	48	01.88	-00	27	56.5	413

1981	ER46	1981	03	11.64518	11	44	27.02	-00	01	35.5	413
1981	ES46*	1981	03	02.62373	11	52	45.17	+01	10	26.7	19.5V 413
1981	ES46	1981	03	07.64918	11	48	55.91	+01	32	04.9	413
1981	ES46	1981	03	11.60352	11	45	45.36	+01	50	05.0	413
1981	ES46	1981	03	11.64518	11	45	43.02	+01	50	16.6	413
1981	ET46*	1981	03	02.57859	11	53	37.04	-00	16	55.9	18.5V 413
1981	ET46	1981	03	07.64918	11	49	39.24	+00	05	06.4	413
1981	ET46	1981	03	11.64518	11	46	22.65	+00	23	35.0	413
1981	EU46*	1981	03	02.57859	11	55	06.67	+01	12	49.8	19.5V 413
1981	EU46	1981	03	07.64918	11	51	41.28	+01	39	58.8	413
1981	EU46	1981	03	11.60352	11	48	51.59	+02	02	08.5	413
1981	EU46	1981	03	11.64518	11	48	49.90	+02	02	22.7	413
1981	EV46*	1981	03	02.57859	11	55	38.28	-00	24	01.3	19.5V 413
1981	EV46	1981	03	07.60751	11	50	56.68	+00	03	24.5	413
1981	EV46	1981	03	11.60352	11	46	58.97	+00	26	51.0	413
1981	EV46	1981	03	11.64518	11	46	56.20	+00	27	06.3	413
1981	EV46	1981	04	11.56596	11	17	48.31	+03	23	23.2	413
1981	EW46*	1981	03	02.62373	11	55	48.41	+01	19	33.4	19.5V 413
1981	EW46	1981	03	07.60751	11	52	08.16	+01	42	47.6	413
1981	EW46	1981	03	07.64918	11	52	06.35	+01	42	58.3	413
1981	EW46	1981	03	11.64518	11	49	01.45	+02	02	19.8	413
1981	EX46*	1981	03	02.62373	11	58	14.27	-01	15	02.8	20.0V 413
1981	EX46	1981	03	07.64918	11	54	41.25	-00	52	23.4	413
1981	EX46	1981	03	11.64518	11	51	42.85	-00	33	09.9	413
1981	EX46	1981	03	16.69028	11	47	51.35	-00	07	56.1	413
1981	EX46	1981	03	16.73195	11	47	49.26	-00	07	43.2	413
1981	EY46*	1981	03	02.62373	11	58	14.50	+01	31	20.6	20.0V 413
1981	EY46	1981	03	03.56736	11	57	24.42	+01	34	50.3	413
1981	EY46	1981	03	11.64518	11	49	44.48	+02	07	09.3	413
1981	EZ46*	1981	03	02.57859	11	58	19.46	+02	41	23.6	20.0V 413
1981	EZ46	1981	03	02.62373	11	58	17.47	+02	41	34.9	413
1981	EZ46	1981	03	03.61076	11	57	33.24	+02	46	19.6	413
1981	EZ46	1981	03	07.60751	11	54	30.52	+03	05	36.3	413
1981	EZ46	1981	03	07.64918	11	54	28.62	+03	05	47.3	413
1981	EZ46	1981	03	11.60352	11	51	22.81	+03	25	06.7	413
1981	EA47*	1981	03	02.62373	11	59	19.51	-00	25	53.3	20.0V 413
1981	EA47	1981	03	07.60751	11	54	36.57	-00	07	44.2	413
1981	EA47	1981	03	07.64918	11	54	34.44	-00	07	35.7	413
1981	EA47	1981	03	11.60352	11	50	38.43	+00	08	04.2	413
1981	EA47	1981	04	11.56596	11	22	11.55	+02	03	51.7	413
1981	EB47*	1981	03	02.57859	12	00	53.44	+00	32	20.4	19.0V 413
1981	EB47	1981	03	07.60751	11	55	48.20	+00	17	55.0	413
1981	EB47	1981	03	07.64918	11	55	45.64	+00	17	48.4	413
1981	EB47	1981	03	11.60352	11	51	27.23	+00	07	37.5	413
1981	EB47	1981	03	16.73195	11	45	38.65	-00	04	34.0	413
1981	EB47	1981	04	12.62048	11	19	49.09	-01	10	03.4	413
1981	EC47*	1981	03	02.57859	12	01	22.22	+03	09	48.9	19.0V 413
1981	EC47	1981	03	03.56736	12	00	40.95	+03	17	45.3	413
1981	EC47	1981	03	03.61076	12	00	39.02	+03	18	04.7	413
1981	EC47	1981	03	07.64918	11	57	40.42	+03	50	52.0	413
1981	ED47*	1981	03	02.57859	12	01	33.71	-01	13	21.4	19.5V 413
1981	ED47	1981	03	03.56736	12	00	42.64	-01	09	23.2	413
1981	ED47	1981	03	03.61076	12	00	40.27	-01	09	10.2	413
1981	ED47	1981	03	07.64918	11	57	00.52	-00	51	43.9	413
1981	ED47	1981	03	11.60352	11	53	13.71	-00	33	06.2	413
1981	ED47	1981	03	11.64518	11	53	10.99	-00	32	53.3	413
1981	ED47	1981	04	11.56596	11	26	54.92	+01	44	34.0	413
1981	EE47*	1981	03	02.57859	12	05	38.53	+01	31	43.7	19.0V 413

1981	EE47	1981	03	03.61076	12	04	53.71	+01	38	34.9	413
1981	EE47	1981	03	07.64918	12	01	49.68	+02	06	03.7	413
1981	EE47	1981	03	11.60352	11	58	40.63	+02	33	41.1	413
1981	EE47	1981	03	11.64518	11	58	38.76	+02	33	57.2	413
1981	EF47*	1981	03	02.63403	12	06	58.98	+00	24	13.5	19.0V 413
1981	EF47	1981	03	06.60816	12	04	05.19	+00	38	48.8	413
1981	EF47	1981	03	11.70301	12	00	06.41	+00	58	56.1	413
1981	EF47	1981	04	05.55430	11	40	27.35	+02	35	15.0	413
1981	EG47*	1981	03	02.63403	12	07	11.61	-05	11	48.3	19.0V 413
1981	EG47	1981	03	06.60816	12	04	23.61	-04	55	28.8	413
1981	EG47	1981	03	11.66134	12	00	29.10	-04	31	19.6	413
1981	EG47	1981	03	11.70301	12	00	27.10	-04	31	07.6	413
1981	EG47	1981	03	15.69509	11	57	10.05	-04	09	42.2	413
1981	EH47*	1981	03	02.63403	12	08	35.19	-05	07	34.2	20.0V 413
1981	EH47	1981	03	06.64983	12	05	50.77	-04	54	37.2	413
1981	EH47	1981	03	11.66134	12	02	15.69	-04	36	50.3	413
1981	EJ47*	1981	03	02.67917	12	11	22.05	+00	01	14.0	20.0V 413
1981	EJ47	1981	03	11.70301	12	04	56.79	+01	16	41.4	413
1981	EJ47	1981	03	15.69509	12	01	44.97	+01	52	21.4	413
1981	EJ47	1981	03	15.73328	12	01	43.25	+01	52	40.3	413
1981	EK47*	1981	03	02.63403	12	12	24.97	-03	47	35.0	19.0V 413
1981	EK47	1981	03	02.67917	12	12	23.69	-03	47	28.2	413
1981	EK47	1981	03	06.60816	12	10	17.59	-03	34	02.3	413
1981	EK47	1981	03	06.64983	12	10	16.18	-03	33	51.7	413
1981	EK47	1981	03	11.66134	12	07	23.10	-03	15	01.7	413
1981	EK47	1981	03	11.70301	12	07	21.51	-03	14	51.0	413
1981	EL47*	1981	03	02.63403	12	13	31.62	-03	04	51.7	19.5V 413
1981	EL47	1981	03	06.64983	12	10	47.20	-02	46	46.7	413
1981	EL47	1981	03	11.70301	12	07	03.45	-02	21	52.6	413
1981	EL47	1981	03	15.69509	12	03	58.67	-02	00	59.4	413
1981	EL47	1981	03	15.73328	12	03	56.87	-02	00	47.2	413
1981	EM47*	1981	03	02.67917	12	14	29.53	-01	15	41.0	19.5V 413
1981	EM47	1981	03	11.66134	12	08	04.70	-00	26	17.2	413
1981	EM47	1981	03	15.69509	12	04	52.30	-00	01	55.8	413
1981	EM47	1981	03	15.73328	12	04	50.30	-00	01	40.8	413
1981	EN47*	1981	03	02.63403	12	17	46.23	-00	53	53.5	19.0V 413
1981	EN47	1981	03	11.66134	12	09	05.33	-00	25	47.7	413
1981	EN47	1981	03	11.70301	12	09	02.79	-00	25	38.9	413
1981	EN47	1981	03	15.69509	12	04	44.85	-00	11	04.6	413
1981	EO47*	1981	03	02.63403	12	21	37.01	-00	46	57.2	19.0V 413
1981	EO47	1981	03	06.60816	12	18	56.60	-00	22	48.8	413
1981	EO47	1981	03	11.66134	12	15	11.29	+00	10	11.5	413
1981	EO47	1981	03	11.70301	12	15	09.26	+00	10	30.8	413
1981	EO47	1981	03	15.73328	12	11	55.68	+00	38	09.8	413
1981	EP47*	1981	03	02.63403	12	21	49.47	-04	08	14.4	19.5V 413
1981	EP47	1981	03	02.67917	12	21	47.78	-04	07	58.3	413
1981	EP47	1981	03	11.66134	12	16	24.36	-03	10	51.1	413
1981	EP47	1981	03	15.69509	12	13	45.33	-02	43	11.0	413
1981	EQ47*	1981	03	02.63403	12	23	41.33	-00	25	02.6	19.0V 413
1981	EQ47	1981	03	02.67917	12	23	39.47	-00	24	48.7	413
1981	EQ47	1981	03	11.66134	12	16	29.65	+00	28	04.9	413
1981	EQ47	1981	03	15.69509	12	12	57.00	+00	53	27.6	413
1981	EQ47	1981	03	15.73328	12	12	55.05	+00	53	41.7	413
1981	EQ47	1981	04	05.55430	11	54	29.71	+02	58	50.0	413
1981	EQ47	1981	04	05.58312	11	54	28.30	+02	58	58.9	413
1981	ER47*	1981	03	02.63403	12	24	13.90	-00	10	16.2	18.5V 413
1981	ER47	1981	03	06.60816	12	21	14.85	+00	08	10.5	413
1981	ER47	1981	03	11.66134	12	17	09.32	+00	33	06.8	413

1981	ER47	1981	03	15.73328	12	13	39.19	+00	54	06.8	413
1981	ER47	1981	04	05.55430	11	55	28.00	+02	37	38.5	413
1981	ER47	1981	04	10.52714	11	51	36.58	+02	58	00.4	413
1981	ES47*	1981	03	02.63403	12	25	16.24	+00	41	32.3	20.0V 413
1981	ES47	1981	03	02.67917	12	25	13.95	+00	41	50.3	413
1981	ES47	1981	03	06.60816	12	22	06.11	+01	02	34.5	413
1981	ES47	1981	03	11.70301	12	17	39.25	+01	31	07.0	413
1981	ES47	1981	03	15.73328	12	13	54.47	+01	54	32.2	413
1981	ET47*	1981	03	02.63403	12	25	23.53	-02	53	53.0	19.5V 413
1981	ET47	1981	03	02.67917	12	25	21.17	-02	53	44.3	413
1981	ET47	1981	03	06.60816	12	22	32.94	-02	40	52.9	413
1981	ET47	1981	03	06.64983	12	22	30.45	-02	40	43.5	413
1981	ET47	1981	03	11.66134	12	18	38.47	-02	22	31.4	413
1981	EU47*	1981	03	02.63403	12	25	45.08	-04	05	02.0	19.5V 413
1981	EU47	1981	03	06.60816	12	23	14.47	-03	48	44.3	413
1981	EU47	1981	03	15.69509	12	16	44.17	-03	05	39.4	413
1981	EV47*	1981	03	02.63403	12	25	45.32	-02	52	20.8	19.0V 413
1981	EV47	1981	03	11.66134	12	20	22.90	-01	31	43.3	413
1981	EV47	1981	03	11.70301	12	20	21.38	-01	31	21.4	413
1981	EV47	1981	03	15.73328	12	17	33.60	-00	51	50.5	413
1981	EW47*	1981	03	02.63403	12	28	06.14	-03	17	05.1	19.0V 413
1981	EW47	1981	03	11.70301	12	22	13.99	-02	25	06.4	413
1981	EW47	1981	03	15.73328	12	19	06.32	-01	58	12.6	413
1981	EX47*	1981	03	02.63403	12	29	27.26	-04	11	02.8	20.0V 413
1981	EX47	1981	03	11.70301	12	21	47.59	-03	19	35.7	413
1981	EX47	1981	03	15.73328	12	17	58.50	-02	53	37.4	413
1981	EX47	1981	04	10.56186	11	53	06.48	+00	00	21.1	413
1981	EY47*	1981	03	03.56736	11	41	20.26	+02	08	05.4	19.0V 413
1981	EY47	1981	03	03.61076	11	41	18.08	+02	08	10.7	413
1981	EY47	1981	03	07.60751	11	37	44.02	+02	16	14.3	413
1981	EY47	1981	03	11.60352	11	34	03.24	+02	24	45.7	413
1981	EY47	1981	03	11.64518	11	34	01.02	+02	24	48.5	413
1981	EZ47*	1981	03	03.61076	11	41	33.39	+02	42	54.0	18.5V 413
1981	EZ47	1981	03	07.60751	11	38	00.63	+03	03	14.0	413
1981	EZ47	1981	03	07.64918	11	37	58.37	+03	03	25.6	413
1981	EZ47	1981	03	11.60352	11	34	24.37	+03	23	46.7	413
1981	EZ47	1981	03	11.64518	11	34	22.09	+03	23	58.9	413
1981	EA48*	1981	03	03.56736	11	41	54.87	-02	17	12.1	20.0V 413
1981	EA48	1981	03	03.61076	11	41	52.85	-02	17	11.6	413
1981	EA48	1981	03	07.60751	11	38	18.62	-02	14	30.6	413
1981	EA48	1981	03	11.58909	11	34	37.96	-02	10	17.1	413
1981	EB48*	1981	03	03.56736	11	54	24.43	+01	12	58.5	19.5V 413
1981	EB48	1981	03	03.61076	11	54	21.53	+01	13	15.3	413
1981	EB48	1981	03	07.60751	11	50	33.84	+01	31	46.2	413
1981	EB48	1981	03	07.64918	11	50	31.57	+01	31	57.5	413
1981	EB48	1981	03	11.60352	11	46	35.51	+01	51	16.1	413
1981	EB48	1981	03	11.64518	11	46	33.06	+01	51	26.9	413
1981	EB48	1981	03	16.69028	11	41	24.23	+02	16	42.5	413
1981	EC48*	1981	03	06.70593	12	02	40.88	-06	10	20.3	19.5V 413
1981	EC48	1981	03	08.72332	12	01	16.56	-05	59	55.4	413
1981	EC48	1981	03	12.58070	11	58	26.16	-05	37	53.4	413
1981	ED48*	1981	03	06.66426	12	07	17.48	-05	15	29.2	19.0V 413
1981	ED48	1981	03	06.70593	12	07	15.47	-05	15	25.8	413
1981	ED48	1981	03	08.68165	12	05	37.28	-05	12	09.1	413
1981	ED48	1981	03	08.72332	12	05	35.30	-05	12	06.0	413
1981	ED48	1981	03	12.58070	12	02	15.71	-05	04	27.1	413
1981	EE48*	1981	03	06.60816	12	07	53.91	-04	28	16.5	19.5V 413
1981	EE48	1981	03	06.64983	12	07	52.52	-04	27	54.8	413

1981	EE48	1981	03	11.66134	12	04	54.55	-03	39	35.4	413
1981	EE48	1981	03	15.69509	12	02	19.05	-02	57	56.1	413
1981	EF48*	1981	03	06.64983	12	19	40.96	-03	44	36.8	19.0V 413
1981	EF48	1981	03	11.66134	12	16	56.46	-03	26	32.7	413
1981	EF48	1981	03	11.70301	12	16	55.17	-03	26	24.5	413
1981	EF48	1981	03	15.69509	12	14	36.89	-03	11	01.1	413
1981	EG48*	1981	03	06.66426	12	23	22.07	-05	53	55.9	18.5V 413
1981	EG48	1981	03	06.70593	12	23	20.19	-05	53	41.0	413
1981	EG48	1981	03	08.68165	12	22	03.08	-05	39	57.1	413
1981	EG48	1981	03	12.58070	12	19	18.59	-05	10	53.5	413
1981	EH48*	1981	03	06.66426	12	23	32.27	-10	37	42.1	17.5V 413
1981	EH48	1981	03	06.70593	12	23	30.72	-10	37	32.9	413
1981	EH48	1981	03	08.68165	12	22	06.10	-10	27	19.6	413
1981	EH48	1981	03	08.72332	12	22	04.32	-10	27	06.1	413
1981	EH48	1981	03	12.61890	12	19	07.87	-10	04	46.4	413
1981	EH48	1981	04	08.55338	11	57	33.15	-06	42	57.3	413
1981	EH48	1981	04	08.58810	11	57	31.67	-06	42	41.5	413
1981	EH48	1981	04	09.50909	11	56	54.13	-06	35	29.7	413
1981	EH48	1981	04	09.54382	11	56	52.75	-06	35	14.0	413
1981	EJ48*	1981	03	06.60816	12	25	39.43	-01	02	23.7	19.0V 413
1981	EJ48	1981	03	11.70301	12	18	16.61	-01	16	34.2	413
1981	EJ48	1981	03	15.69509	12	12	18.57	-01	26	23.6	413
1981	EK48*	1981	03	07.66569	11	41	07.20	-04	59	46.5	19.5V 413
1981	EK48	1981	03	11.54742	11	37	02.90	-04	57	48.9	413
1981	EK48	1981	03	15.64523	11	32	41.26	-04	54	13.2	413

OBSERVATIONS MADE AT MOUNT JOHN UNIVERSITY OBSERVATORY.

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

Object		Date	UT	R. A. (1950)			Decl.			Mag.	Obs.
1036		1983	02 14.47949	10	25	49.04	-20	51	48.7		474
1036		1983	02 14.50218	10	25	47.99	-20	51	44.0		474
1620		1983	03 06.52225	10	09	37.76	-07	25	04.2		474
1620		1983	03 06.52896	10	09	34.43	-07	25	54.1		474
2640		1982	03 21.46331	13	24	21.06	-10	50	53.0		474
2640		1982	03 21.48553	13	24	19.93	-10	50	52.6		474
2937		1983	04 16.37986	13	00	12.63	-38	31	47.8		474
2937		1983	04 16.40168	13	00	11.13	-38	31	37.3		474
1981	ET3	1984	06 22.40233	15	46	46.72	-73	08	05.6		474
1981	ET3	1984	06 22.41691	15	46	42.71	-73	07	59.0		474
1981	GX	1984	06 22.48369	16	45	27.83	-16	45	36.2		474
1981	GX	1984	06 23.43497	16	44	29.86	-16	31	52.5		474
1981	GX	1984	06 23.45765	16	44	28.52	-16	31	33.2		474
1981	PB	1984	06 23.54284	17	42	54.25	-36	43	19.9		474
1981	PB	1984	06 23.57617	17	42	52.32	-36	43	19.6		474
1983	RD	1983	10 05.65948	04	03	49.64	-13	05	31.5		474
1983	RD	1983	10 05.66509	04	03	51.04	-13	05	42.5		474
1983	RD	1983	12 29.54390	04	35	30.29	-03	29	53.3		474
1983	RD	1983	12 29.58343	04	35	30.57	-03	29	04.3		474
1984	JS *	1984	05 03.47652	14	27	54.44	-24	43	40.6	17	474
1984	JS	1984	05 03.50510	14	27	53.07	-24	43	25.5		474
1984	KB	1984	06 22.44388	16	29	07.85	-07	10	40.0		474
1984	KB	1984	06 22.46066	16	29	07.06	-07	11	00.8		474
1984	KD	1984	06 18.37328	12	42	31.66	-39	27	57.1		474
1984	KD	1984	06 18.37472	12	42	28.91	-39	28	49.2		474
1984	KD	1984	06 19.38785	12	05	58.05	-49	35	22.7		474

1984 KD	1984 06 19.38935	12 05 53.93	-49 36 13.6		474
1984 KD	1984 06 19.42396	12 04 20.76	-49 55 39.8		474
1984 KD	1984 06 19.42546	12 04 16.67	-49 56 30.6		474
1984 KD	1984 06 22.35869	08 44 23.43	-67 16 50.8		474
1984 KD	1984 06 22.36020	08 44 15.87	-67 16 56.9		474
1984 KD	1984 06 22.37953	08 42 39.86	-67 18 12.4		474
1984 KD	1984 06 22.38103	08 42 32.44	-67 18 18.4		474
5550 P-L	1984 05 29.48497	16 40 52.78	-38 05 17.1		474
5550 P-L	1984 05 29.53890	16 40 48.61	-38 05 24.3		474

OBSERVATIONS MADE AT THE OSSERVATORIO S. VITTORE.

Plates taken at the prime focus of the 0.45-m reflector by G. Sassi and C. Vacchi, blinked by Vacchi, measured by Vacchi, V. Goretti and E. Colombini. Reduced by Colombini using five SAO Catalog or AGK3 reference stars. Contact: E. Colombini, Via S. Vittore 44, I-40136 Bologna, Italy.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
3097	1984 07 03.89236	16 41 07.40	-11 50 10.8			552
3097	1984 07 03.91736	16 41 06.47	-11 50 11.2			552
3103	1982 02 28.88264	09 48 45.80	+34 38 43.1		17.0	552
3103	1982 02 28.90208	09 48 43.87	+34 39 02.9			552
3103	1982 03 01.92778	09 47 15.99	+34 55 58.5		17.0	552
3103	1982 03 01.94653	09 47 14.42	+34 56 15.6			552

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

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

Object	Date	UT	R. A. (1950)	Decl.	Obs.
18	1984 07 02.87778	16 19 37.28	-06 08 50.1		565
18	1984 07 02.91319	16 19 35.84	-06 08 57.5		565
51	1983 09 28.82726	23 17 24.86	-04 20 19.8		565
51	1983 09 28.88119	23 17 22.45	-04 20 49.7		565
95	1984 07 18.86530	18 49 32.18	-09 43 09.9		565
95	1984 07 18.89928	18 49 30.57	-09 43 09.1		565
185	1984 07 03.93023	21 08 56.11	+01 19 18.3		565
185	1984 07 03.96354	21 08 55.38	+01 19 10.1		565
201	1984 07 22.87563	19 24 07.68	-15 03 48.5		565
201	1984 07 22.90894	19 24 06.02	-15 03 57.9		565
216	1984 07 03.87537	18 06 57.87	-06 19 13.4		565
216	1984 07 03.90366	18 06 56.50	-06 19 12.6		565
218	1984 07 04.90211	18 50 51.12	+00 46 20.2		565
218	1984 07 04.93405	18 50 49.60	+00 46 13.1		565
258	1984 07 20.87419	19 17 21.61	+02 42 52.7		565
258	1984 07 20.90969	19 17 19.72	+02 42 47.8		565
269	1984 07 23.87485	20 01 17.87	-14 03 43.1		565
269	1984 07 23.90859	20 01 16.27	-14 03 54.7		565

OBSERVATIONS MADE AT MAUNA KEA.

Positions by D. Tholen, D. Cruikshank and W. Hartmann using the encoders at the Infrared Telescope Facility. Contact: D. Tholen, Institute of Astronomy, 2680 Woodlawn Drive, Honolulu, HI 96822, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1984 QA	1984 09 04.39375	23 57 24.29	-15 05 54.5		568
1984 QA	1984 09 04.40208	23 57 21.00	-15 06 28.2		568
1984 QA	1984 09 04.52639	23 56 32.49	-15 14 30.5		568
1984 QA	1984 09 04.62639	23 55 54.08	-15 20 50.7		568
1984 QA	1984 09 06.60347	23 44 25.48	-17 17 36.6		568
1984 QA	1984 09 07.45278	23 39 53.20	-18 02 10.3		568

OBSERVATIONS MADE WITH THE 0.46-M SCHMIDT AT PALOMAR BY E. F. HELIN, S. R. SWANSON, M. A. BARUCCI, R. S. DUNBAR AND A. BLAND.

Contact: E. Helin, MS 264-301, Jet Propulsion Laboratory, Pasadena, CA 91109, U.S.A.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
2811		1984 01	30.35347	08 27 17.09	+19 52 51.0		1	675
2811		1984 01	30.33264	08 27 18.14	+19 52 47.7		1	675
1984 QA	*	1984 08	30.46458	00 31 36.68	-08 36 56.3	15	2	675

Note 1: measured by Swanson. 2: discovered by Dunbar and Barucci; measured by Dunbar, assisted by Helin and Barucci, with manually operated PDS microdensitometer.

OBSERVATIONS MADE WITH THE 1.2-M SCHMIDT AT PALOMAR BY M. A. BARUCCI, E. HELIN, C. KOWAL AND R. S. DUNBAR.

Measurements by Barucci, Dunbar and S. Swanson, mainly using a manually operated PDS microdensitometer. Contact: E. Helin, MS 264-301, Jet Propulsion Laboratory, Pasadena, CA 91109, U.S.A.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
2811		1984 01	29.29306	08 28 15.42	+19 49 50.3			675
2811		1984 01	29.33815	08 28 13.05	+19 49 57.5			675
1983 PA		1984 01	29.17500	01 34 37.16	+26 05 18.4		1	675
1983 PA		1984 01	29.19583	01 34 40.71	+26 05 19.7		1	675
1984 PD	*	1984 08	01.41806	21 13 44.58	-16 02 57.9	18	2	675
1984 PD		1984 08	01.43889	21 13 42.67	-16 02 38.3			675
1984 PE	*	1984 08	02.34583	21 08 25.77	-21 03 46.5	16	3	675
1984 PE		1984 08	02.38056	21 08 24.23	-21 04 24.2			675
1984 QA		1984 08	31.47604	00 23 56.80	-10 08 17.8			675
1984 QA		1984 09	01.24132	00 18 26.24	-11 13 19.2			675
1984 QA		1984 09	01.48715	00 16 36.56	-11 33 33.4			675
1984 QA		1984 09	02.26632	00 11 15.04	-12 35 10.6			675
1984 QA		1984 09	03.29896	00 04 20.70	-13 51 32.4			675

Note 1: remeasurement of the positions on MPC 8754. 2: discoverer Helin. 3: discoverer Barucci.

OBSERVATIONS MADE AT PALOMAR.

Palomar-Leiden Survey plates taken with the 1.2-m Schmidt by T. Gehrels, scanned and measured by C. J. van Houten and I. van Houten-Groeneveld at Leiden. Computational support from the late P. Herget. Contact: C. J. van Houten, Sterrewacht, 2300 RA Leiden 2405, The Netherlands.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
2535 P-L	*	1960 09	26.37988	00 48 48.46	+02 18 36.5	17.3	675
2535 P-L		1960 09	28.43822	00 47 19.72	+02 07 48.8		675
2535 P-L		1960 09	29.39514	00 46 38.19	+02 02 45.8		675
2535 P-L		1960 10	17.31529	00 33 50.14	+00 34 40.6		675
2535 P-L		1960 10	22.26809	00 30 45.92	+00 14 59.6		675
2535 P-L		1960 10	25.30351	00 29 04.17	+00 04 28.2		675
2535 P-L		1960 10	26.35766	00 28 30.95	+00 01 05.2		675

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY'S ANDERSON MESA STATION.

Plates with the 0.33-m photographic telescope. Observers H. L. Giclas and B. A. Skiff. Measured by Skiff and E. L. G. Bowell using a PDS scanning microdensitometer. SAO reference stars, global solutions. Contact: E. L. G. Bowell, Lowell Observatory, P.O. Box 1269, Flagstaff, AZ 86002, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
22	1984 06	01.26597	16 09 45.08	-21 09 25.3			688
22	1984 06	01.29653	16 09 43.33	-21 09 27.4			688
86	1984 06	01.26597	16 05 24.33	-18 18 47.5			688
86	1984 06	01.29653	16 05 22.78	-18 18 45.3			688
145	1984 06	02.19792	15 36 49.31	-13 40 05.5			688

145	1984	06	02.26528	15	36	45.45	-13	40	11.7		688
152	1984	05	03.33264	15	39	33.36	-23	37	16.0		688
152	1984	05	03.36389	15	39	31.79	-23	37	17.8		688
153	1984	08	22.16944	20	56	03.25	-06	02	28.1		688
153	1984	08	22.22778	20	56	01.19	-06	02	40.5		688
153	1984	08	29.16042	20	52	19.34	-06	27	41.4		688
153	1984	08	29.18403	20	52	18.61	-06	27	46.9		688
182	1984	05	03.33264	15	31	33.91	-16	26	58.3		688
182	1984	05	03.36389	15	31	32.08	-16	26	53.1		688
196	1984	05	04.25556	15	22	05.77	-14	06	12.9		688
196	1984	05	04.30139	15	22	03.48	-14	06	09.3		688
235	1984	06	02.19792	15	44	44.90	-19	05	17.0		688
235	1984	06	02.26528	15	44	41.57	-19	05	23.2		688
259	1984	01	04.13819	05	28	15.98	+23	28	46.9		688
259	1984	01	04.20764	05	28	12.69	+23	28	53.5		688
267	1984	06	01.28125	16	18	28.26	-20	24	00.2		688
267	1984	06	01.31181	16	18	26.58	-20	24	01.8		688
274	1984	05	03.33264	15	49	15.19	-16	14	57.0		688
274	1984	05	03.36389	15	49	13.76	-16	14	53.6		688
274	1984	06	02.19792	15	25	19.82	-15	28	22.7		688
274	1984	06	02.26528	15	25	16.72	-15	28	18.7		688
279	1984	08	22.20972	21	18	25.57	-18	36	37.3		688
279	1984	08	22.26667	21	18	23.55	-18	36	46.0		688
309	1975	09	28.22708	00	36	56.14	+05	18	52.2		688
309	1975	10	04.33056	00	31	28.02	+04	54	39.3		688
309	1975	10	10.25486	00	26	16.15	+04	30	57.9		688
309	1975	10	11.27639	00	25	24.06	+04	26	57.4		688
346	1984	06	01.28125	16	22	54.93	-16	05	12.2		688
346	1984	06	01.31181	16	22	53.21	-16	05	13.3		688
355	1984	08	22.30833	22	40	27.39	-10	36	52.2		688
355	1984	08	22.34375	22	40	25.39	-10	37	00.8		688
378	1984	06	01.28125	16	30	08.83	-18	44	18.4		688
378	1984	06	01.31181	16	30	07.22	-18	44	12.0		688
429	1984	05	03.33264	15	49	08.92	-16	36	38.5		688
429	1984	05	03.36389	15	49	07.38	-16	36	27.4		688
429	1984	06	02.19792	15	23	40.99	-13	43	26.0		688
429	1984	06	02.26528	15	23	37.72	-13	43	04.8		688
449	1984	08	22.20972	21	30	33.49	-18	51	27.2		688
449	1984	08	22.26667	21	30	30.37	-18	51	43.1		688
460	1984	06	01.28125	16	32	18.51	-16	48	03.2		688
460	1984	06	01.31181	16	32	16.87	-16	47	57.3		688
466	1984	08	22.16944	20	49	49.92	-04	51	03.0	1	688
466	1984	08	22.22778	20	49	47.32	-04	51	05.5		688
466	1984	08	29.16042	20	45	05.34	-04	57	02.3		688
466	1984	08	29.18403	20	45	04.42	-04	57	03.8		688
499	1984	05	03.28681	15	05	29.19	-18	44	34.7		688
499	1984	05	03.31736	15	05	28.04	-18	44	32.2		688
515	1984	05	03.33264	15	36	03.36	-16	40	32.0	1	688
515	1984	05	03.36389	15	36	01.63	-16	40	28.2		688
522	1984	08	22.30833	22	58	16.79	-11	03	37.3		688
522	1984	08	22.34375	22	58	15.46	-11	03	48.7		688
543	1984	08	22.28958	22	17	29.95	-01	55	07.0		688
543	1984	08	22.32569	22	17	28.32	-01	55	10.3		688
562	1984	05	04.25556	15	02	15.92	-09	42	16.8		688
577	1984	01	04.13819	05	03	40.22	+29	19	38.3		688
577	1984	01	04.20764	05	03	37.14	+29	19	28.6		688
584	1984	05	03.27153	14	15	29.16	-29	00	59.3		688
584	1984	05	03.30208	14	15	27.23	-29	00	47.8		688
589	1984	05	04.19236	12	54	27.18	+00	42	37.4		688

589		1984	05	04.23681	12	54	25.92	+00	42	48.5		688
614		1984	05	03.33264	15	36	34.83	-16	41	31.6		688
614		1984	05	03.36389	15	36	33.28	-16	41	22.4		688
618		1984	05	04.28611	15	57	59.83	+00	38	52.5		688
618		1984	05	04.33194	15	57	57.85	+00	38	58.6		688
629		1984	01	04.13819	05	21	40.60	+23	36	22.5		688
629		1984	01	04.20764	05	21	37.23	+23	36	34.4		688
710		1984	06	01.28125	16	34	19.01	-19	20	27.4		688
710		1984	06	01.31181	16	34	17.49	-19	20	25.0		688
714		1984	06	01.28125	16	27	29.80	-15	35	26.9		688
714		1984	06	01.31181	16	27	28.04	-15	35	13.8		688
720		1984	08	22.20972	21	23	31.25	-18	55	40.3		688
720		1984	08	22.26667	21	23	28.37	-18	55	51.2		688
725		1984	05	03.33264	15	29	29.64	-17	09	57.5	16.8	688
725		1984	05	03.36389	15	29	27.70	-17	09	52.3		688
726		1984	05	03.28681	14	58	19.11	-23	43	49.5		688
726		1984	05	03.31736	14	58	17.25	-23	43	36.3		688
753		1984	05	04.19236	12	59	04.84	+05	13	51.7		688
753		1984	05	04.23681	12	59	02.58	+05	13	39.6		688
806		1984	05	04.19236	13	11	43.57	+00	00	14.9		688
806		1984	05	04.23681	13	11	41.72	+00	00	12.6		688
820		1984	08	22.20972	21	18	06.12	-19	16	27.8		688
820		1984	08	22.26667	21	18	03.57	-19	16	44.1		688
827		1984	06	01.26597	16	10	40.80	-15	19	43.5	17.2	688
836		1984	08	22.28958	22	28	49.80	-01	32	11.3		688
836		1984	08	22.32569	22	28	47.92	-01	32	27.3		688
838		1984	06	01.28125	16	38	12.38	-19	09	05.1		688
838		1984	06	01.31181	16	38	10.76	-19	08	56.8		688
857		1984	05	04.19236	12	51	42.35	+02	37	50.5		688
857		1984	05	04.23681	12	51	40.41	+02	37	52.1		688
875		1975	09	28.22708	00	25	48.58	+07	22	36.5		688
875		1975	10	04.33056	00	21	23.10	+06	01	35.8		688
875		1975	10	10.25486	00	17	18.82	+04	43	28.7		688
875		1975	10	11.27639	00	16	38.99	+04	30	16.4		688
913		1984	05	04.19236	13	08	01.28	+03	25	09.3		688
913		1984	05	04.23681	13	07	59.06	+03	25	11.5		688
925		1984	08	22.16944	20	53	25.65	-05	42	59.9		688
925		1984	08	22.22778	20	53	22.36	-05	42	57.8		688
925		1984	08	29.16042	20	47	18.86	-05	39	26.1		688
925		1984	08	29.18403	20	47	17.66	-05	39	25.7		688
940		1984	01	04.13819	05	19	01.95	+25	41	56.5		688
940		1984	01	04.20764	05	18	58.99	+25	41	57.2		688
962		1984	06	01.28125	16	29	35.69	-17	59	01.7		688
962		1984	06	01.31181	16	29	33.95	-17	58	58.5		688
969		1984	01	04.13819	05	03	27.93	+24	10	06.2		688
969		1984	01	04.20764	05	03	25.14	+24	09	53.5	3	688
1003		1984	08	22.20972	21	33	16.41	-14	43	40.9		688
1003		1984	08	22.26667	21	33	13.81	-14	43	52.4		688
1004		1984	06	01.28125	16	22	43.82	-17	24	16.8		688
1004		1984	06	01.31181	16	22	42.46	-17	24	13.6		688
1021		1984	05	04.28611	15	59	52.27	-00	45	28.9		688
1021		1984	05	04.33194	15	59	50.13	-00	45	21.0		688
1029		1984	08	22.20972	21	25	08.53	-18	46	15.2	1	688
1029		1984	08	22.26667	21	25	05.80	-18	46	24.4		688
1067		1984	08	22.16944	21	07	12.35	-07	13	05.4		688
1067		1984	08	22.22778	21	07	09.20	-07	13	09.4		688
1067		1984	08	29.16042	21	01	24.43	-07	22	11.3		688
1067		1984	08	29.18403	21	01	23.31	-07	22	14.3		688
1073		1984	05	03.28681	15	10	30.47	-18	08	04.6		688

1073	1984	05	03.31736	15	10	29.04	-18	08	00.8			688
1091	1984	01	04.13819	05	28	01.01	+23	28	31.6			688
1091	1984	01	04.20764	05	27	57.97	+23	28	30.7			688
1100	1984	01	04.13819	05	08	39.21	+23	51	25.6		16.0	688
1118	1984	08	22.28958	22	27	57.22	-03	22	05.2			688
1118	1984	08	22.32569	22	27	55.51	-03	22	05.1			688
1162	1984	01	04.13819	05	23	14.50	+24	56	05.9			688
1162	1984	01	04.20764	05	23	11.90	+24	56	04.2			688
1171	1984	05	04.25556	15	22	14.37	-14	26	18.1			688
1171	1984	05	04.30139	15	22	12.34	-14	26	10.9			688
1271	1984	05	04.19236	12	59	31.94	+02	56	41.2			688
1271	1984	05	04.23681	12	59	30.50	+02	56	47.1			688
1288	1984	01	04.13819	05	25	00.49	+28	49	22.3			688
1288	1984	01	04.20764	05	24	56.76	+28	49	07.2			688
1296	1984	06	01.26597	15	55	23.92	-18	19	19.1			688
1296	1984	06	01.29653	15	55	22.10	-18	19	11.5			688
1297	1984	08	22.28958	22	32	37.28	+00	17	14.4			688
1297	1984	08	22.32569	22	32	35.30	+00	17	09.3		1	688
1353	1984	08	22.28958	22	24	47.58	+02	58	48.0			688
1353	1984	08	22.32569	22	24	46.00	+02	58	37.2			688
1377	1984	05	03.28681	15	03	00.93	-16	43	30.9			688
1377	1984	05	03.31736	15	02	59.21	-16	43	15.9			688
1377	1984	05	04.25556	15	02	08.46	-16	35	23.5			688
1377	1984	05	04.30139	15	02	05.83	-16	34	59.2			688
1381	1984	05	03.27153	14	40	00.53	-21	31	49.8		3	688
1381	1984	05	03.30208	14	39	58.41	-21	31	45.8		1	688
1392	1984	08	22.19097	21	30	47.89	-27	51	43.7			688
1392	1984	08	22.24061	21	30	43.99	-27	51	38.5		3	688
1397	1984	05	04.25556	15	09	29.25	-14	15	27.6			688
1397	1984	05	04.30139	15	09	26.68	-14	15	22.3			688
1400	1984	05	04.25556	15	27	57.61	-10	47	30.4			688
1400	1984	05	04.30139	15	27	55.53	-10	47	07.6			688
1432	1984	05	04.19236	13	01	40.75	+06	39	24.4			688
1432	1984	05	04.23681	13	01	38.79	+06	39	29.4			688
1450	1984	01	04.13819	05	14	57.12	+25	19	22.8		15.5	688
1450	1984	01	04.20764	05	14	53.88	+25	19	30.6			688
1462	1984	05	03.36389	15	53	48.34	-21	01	54.3			688
1504	1984	06	01.28125	16	34	06.55	-13	51	56.4		1	688
1504	1984	06	01.31181	16	34	04.25	-13	52	01.9			688
1517	1984	08	22.19097	21	28	52.60	-23	40	48.3			688
1517	1984	08	22.24061	21	28	49.65	-23	41	00.0			688
1522	1984	06	01.26597	15	58	59.92	-21	21	47.2			688
1522	1984	06	01.29653	15	58	57.82	-21	21	45.2			688
1539	1984	08	22.20972	21	33	02.10	-14	35	59.7			688
1539	1984	08	22.26667	21	32	59.46	-14	36	14.3			688
1628	1984	05	04.27083	15	14	02.15	+02	45	16.0			688
1628	1984	05	04.31667	15	14	00.05	+02	45	36.4			688
1628	1984	06	02.17569	14	54	33.82	+05	00	23.3			688
1628	1984	06	02.22014	14	54	32.31	+05	00	28.2			688
1634	1984	01	04.20764	05	11	29.58	+22	23	58.3		17.5	688
1661	1984	05	03.33264	15	53	16.86	-23	17	10.7			688
1661	1984	05	03.36389	15	53	15.15	-23	17	03.1			688
1668	1984	06	02.19792	15	21	36.55	-11	19	13.1		1	688
1668	1984	06	02.26528	15	21	33.45	-11	19	04.4			688
1673	1975	09	28.22708	00	24	11.38	+05	01	05.2			688
1673	1975	10	04.33056	00	19	44.87	+04	23	27.5			688
1673	1975	10	10.25486	00	15	32.74	+03	46	37.9			688
1673	1975	10	11.27639	00	14	50.75	+03	40	23.5			688
1723	1984	05	04.28611	15	50	22.58	-03	38	13.2			688

1723		1984	05	04.33194	15	50	20.56	-03	38	00.9		688
1733		1984	05	04.25556	15	04	09.07	-09	46	44.5		688
1733		1984	05	04.30139	15	04	06.10	-09	46	30.7		688
1789		1984	01	04.13819	05	19	17.46	+22	25	22.5	16.8	688
1789		1984	01	04.20764	05	19	13.44	+22	25	22.9		688
1894		1984	05	03.28681	15	02	55.27	-17	59	40.2		688
1894		1984	05	03.31736	15	02	53.67	-17	59	35.5		688
1897		1984	05	03.33264	15	52	53.68	-18	54	11.0	17.5	688
1897		1984	06	02.19792	15	21	38.58	-18	13	10.9		688
1897		1984	06	02.26528	15	21	34.38	-18	13	08.1		688
1939		1984	06	01.26597	16	03	20.78	-21	22	43.5		688
1939		1984	06	01.29653	16	03	19.26	-21	22	40.5		688
1967		1984	05	03.33264	15	36	19.82	-18	36	07.9		688
1967		1984	05	03.36389	15	36	17.85	-18	36	04.5		688
2051		1984	05	03.33264	15	43	41.95	-19	08	33.1		688
2051		1984	05	03.36389	15	43	40.31	-19	08	26.2	3	688
2051		1984	06	02.19792	15	18	58.48	-17	30	41.4		688
2051		1984	06	02.26528	15	18	55.15	-17	30	26.2		688
2053		1984	08	29.16042	20	59	48.73	-06	43	41.3	17.2	688
2053		1984	08	29.18403	20	59	47.79	-06	43	51.1		688
2081		1984	05	04.19236	12	48	07.02	-00	31	07.3		688
2081		1984	05	04.23681	12	48	05.26	-00	31	04.1		688
2084		1984	05	04.25556	15	21	53.07	-10	34	33.9		688
2124		1984	05	03.36389	15	50	09.08	-22	11	28.7	17.0	1 688
2185		1984	01	04.13819	05	15	12.83	+29	32	49.8	16.5	688
2185		1984	01	04.20764	05	15	09.12	+29	32	52.5		688
2197		1975	09	28.22708	00	29	37.92	+00	05	27.4		688
2197		1975	10	04.33056	00	25	04.80	-00	21	11.0		688
2197		1975	10	10.25486	00	20	43.36	-00	45	49.7		688
2197		1975	10	11.27639	00	19	59.27	-00	49	52.2		688
2197		1984	05	03.28681	14	57	20.94	-16	04	26.4		688
2197		1984	05	03.31736	14	57	19.40	-16	04	22.7		688
2203		1984	08	22.30833	22	33	43.37	-11	50	39.6		688
2203		1984	08	22.34375	22	33	41.49	-11	50	48.2		688
2242		1984	05	03.31736	14	46	05.28	-20	00	50.3		688
2307		1984	05	03.31736	15	12	36.45	-22	43	25.2		688
2330		1984	06	01.32847	16	58	54.95	-10	46	49.9		688
2330		1984	06	01.35486	16	58	53.78	-10	46	49.2		688
2330		1984	06	02.29375	16	58	09.65	-10	46	12.0		688
2330		1984	06	02.32917	16	58	08.08	-10	46	10.6		688
2352		1984	05	03.28681	15	03	02.86	-19	23	21.6		688
2352		1984	05	03.31736	15	03	01.35	-19	23	10.7		688
2353		1984	08	22.30833	22	56	36.96	-13	17	17.3		688
2353		1984	08	22.34375	22	56	34.99	-13	17	26.1	1	688
2413		1984	05	04.19236	13	00	25.78	+02	48	38.3	16.5	688
2413		1984	05	04.23681	13	00	24.44	+02	48	48.9		688
2440		1984	08	22.16944	20	49	34.47	-08	43	26.6		688
2440		1984	08	22.22778	20	49	31.88	-08	43	44.8		688
2440		1984	08	29.16042	20	45	33.00	-09	18	50.8		688
2440		1984	08	29.18403	20	45	32.22	-09	18	58.3		688
2466		1984	06	01.32847	16	59	06.74	-14	27	27.7		688
2466		1984	06	01.35486	16	59	05.32	-14	27	24.8		688
2466		1984	06	02.29375	16	58	13.34	-14	25	42.6		688
2466		1984	06	02.32917	16	58	11.37	-14	25	39.4		688
2467		1984	01	04.13819	05	19	48.97	+29	12	23.5	1	688
2467		1984	01	04.20764	05	19	44.89	+29	12	06.8	1	688
2498		1984	01	04.13819	05	25	39.10	+24	49	35.0		688
2498		1984	01	04.20764	05	25	35.57	+24	49	32.0		688
2504		1984	01	04.13819	05	23	33.84	+29	22	13.6		688

2504		1984	01	04.20764	05	23	30.16	+29	22	09.6			688
2512		1984	05	03.33264	15	51	11.09	-17	02	37.7			688
2512		1984	06	02.19792	15	19	25.92	-16	32	28.0			688
2512		1984	06	02.26528	15	19	22.18	-16	32	25.3			688
2527		1984	05	04.25556	15	06	29.96	-14	43	22.3		3	688
2527		1984	05	04.30139	15	06	27.40	-14	43	14.8		3	688
2617		1984	06	01.28125	16	30	40.74	-20	28	07.1	17.0		688
2617		1984	06	01.31181	16	30	39.32	-20	28	08.6			688
2646		1984	08	22.19097	21	32	15.30	-22	31	34.4			688
2757		1984	01	04.13819	05	22	54.55	+24	14	16.7	16.2	1	688
2757		1984	01	04.20764	05	22	51.76	+24	14	14.2		1	688
2777		1984	01	04.13819	05	09	07.38	+29	44	43.6			688
2777		1984	01	04.20764	05	09	03.62	+29	44	40.5			688
2805		1984	05	03.33264	15	41	35.65	-20	19	09.3			688
2813		1984	06	01.26597	16	05	49.93	-16	09	25.2			688
2813		1984	06	01.29653	16	05	48.52	-16	09	15.2			688
2864		1984	06	01.28125	16	32	38.02	-17	24	44.7			688
2864		1984	06	01.31181	16	32	36.10	-17	24	40.4			688
2975		1984	05	03.28681	14	56	45.48	-19	33	30.0			688
2975		1984	05	03.31736	14	56	43.63	-19	33	15.1			688
3072		1984	05	04.23681	12	47	26.68	+03	23	05.2	17.2		688
3097		1984	06	01.32847	17	05	11.72	-12	46	01.4	16.8		688
3097		1984	06	01.35486	17	05	10.42	-12	45	56.5			688
3097		1984	06	02.29375	17	04	24.45	-12	42	54.4	16.8		688
3097		1984	06	02.32917	17	04	22.62	-12	42	47.4			688
1969	TP1	1984	08	29.16042	20	56	47.66	-03	25	19.5	17.2		688
1975	SB	1975	09	28.22708	00	16	20.26	+05	36	23.9			688
1975	SB	1975	10	04.33056	00	10	58.23	+04	58	14.3			688
1975	SB	1975	10	10.25486	00	06	15.45	+04	22	01.3			688
1975	SB	1975	10	11.27639	00	05	31.01	+04	16	03.8			688
1975	SC	1975	09	28.22708	00	19	01.37	+03	18	21.1			688
1975	SC	1975	10	04.33056	00	13	33.15	+02	50	09.4			688
1975	SC	1975	10	10.25486	00	08	26.25	+02	23	18.8			688
1975	SC	1975	10	11.27639	00	07	35.52	+02	18	50.6			688
1975	SE	1975	09	28.22708	00	33	34.85	+03	01	46.5			688
1975	SE	1975	10	04.33056	00	27	30.70	+02	55	43.4			688
1975	SE	1975	10	10.25486	00	21	44.09	+02	50	12.4		6	688
1975	SE	1975	10	11.27639	00	20	45.90	+02	49	22.8		6	688
1977	QC5	1984	06	01.26597	16	13	08.54	-21	01	38.9	16.5		688
1977	QC5	1984	06	01.29653	16	13	06.59	-21	01	38.9			688
1980	FB12	1984	06	01.26597	16	06	34.35	-16	35	31.9	16.8		688
1980	FB12	1984	06	01.29653	16	06	32.73	-16	35	26.3			688
1980	JE	1984	05	04.19236	13	08	41.28	+05	38	04.2	16.8		688
1980	JE	1984	05	04.23681	13	08	39.08	+05	37	46.3			688
1981	PG	1984	05	03.28681	15	10	57.37	-20	53	40.8	17.0		688
1981	PG	1984	05	03.31736	15	10	55.57	-20	53	32.1			688
1981	PL	1984	05	03.27153	14	27	38.14	-24	22	41.3			688
1981	PL	1984	05	03.30208	14	27	36.55	-24	22	29.2			688
1981	PM	1984	05	03.28681	15	05	49.11	-19	09	16.7	16.5		688
1981	PM	1984	05	03.31736	15	05	47.41	-19	09	03.6			688
1981	WW	1984	06	01.28125	16	35	13.50	-20	38	05.2	17.0		688
1981	WW	1984	06	01.31181	16	35	11.46	-20	38	04.4			688
1982	UM	1984	01	04.13819	05	27	16.24	+27	19	35.0	17.2	1	688
1983	BN	1984	06	01.28125	16	35	34.33	-15	45	10.6	16.5		688
1983	BN	1984	06	01.31181	16	35	32.44	-15	45	09.3			688
1983	CF	1984	06	02.19792	15	39	38.77	-16	37	42.7	16.0	1	688
1983	CF	1984	06	02.26528	15	39	34.48	-16	37	39.5		1	688
1983	CM1	1984	05	03.33264	15	48	32.06	-16	43	39.6	17.5		688
1983	CM1	1984	05	03.36389	15	48	30.55	-16	43	35.5			688

1983 CM1		1984 06 02.19792	15 23 21.52	-15 43 05.6			17.5	1	688
1983 CM1		1984 06 02.26528	15 23 17.93	-15 42 58.0				1	688
1984 FK		1984 05 04.19236	12 48 18.31	+00 36 55.8			17.0	3	688
1984 FK		1984 05 04.23681	12 48 17.09	+00 37 06.2					688
1984 JT	*	1984 05 03.27153	14 15 30.91	-27 10 06.9			16.5	4	688
1984 JT		1984 05 03.30208	14 15 28.94	-27 10 03.8					688
1984 JU	*	1984 05 03.27153	14 20 48.16	-22 29 06.5			16.8	5	688
1984 JU		1984 05 03.30208	14 20 46.72	-22 28 54.5					688
1984 JV	*	1984 05 03.27153	14 25 51.71	-24 26 22.9			16.2	4	688
1984 JV		1984 05 03.30208	14 25 50.22	-24 26 09.3					688
1984 JW	*	1984 05 03.27153	14 38 57.83	-22 28 25.8			16.5	4	688
1984 JW		1984 05 03.30208	14 38 56.18	-22 28 07.8					688
1984 JX	*	1984 05 03.28681	14 45 37.68	-18 04 04.6			16.0	4	688
1984 JX		1984 05 03.31736	14 45 35.54	-18 03 59.6					688
1984 JY	*	1984 05 03.28681	14 54 57.11	-17 52 23.9			16.5	4	688
1984 JY		1984 05 03.31736	14 54 54.90	-17 52 20.5					688
1984 JZ	*	1984 05 03.28681	14 58 18.92	-16 29 46.4			16.8	4	688
1984 JZ		1984 05 03.31736	14 58 17.17	-16 29 50.5					688
1984 JA1	*	1984 05 03.28681	15 07 44.79	-20 26 57.4			15.8	4	688
1984 JA1		1984 05 03.31736	15 07 43.45	-20 26 44.9					688
1984 JB1	*	1984 05 03.33264	15 34 58.06	-21 40 32.4			17.0	4	688
1984 JB1		1984 05 03.36389	15 34 56.13	-21 40 22.6					688
1984 JC1	*	1984 05 03.33264	15 38 55.35	-21 22 11.5			17.0	4	688
1984 JC1		1984 05 03.36389	15 38 53.60	-21 21 57.0				2	688
1984 JD1	*	1984 05 03.33264	15 51 54.37	-21 08 33.7			16.5	4	688
1984 JD1		1984 05 03.36389	15 51 52.84	-21 08 26.6					688
1984 JE1	*	1984 05 04.25556	15 01 55.80	-11 22 28.0			17.0	4	688
1984 JE1		1984 05 04.30139	15 01 53.04	-11 22 39.8					688
1984 JF1	*	1984 05 04.25556	15 09 56.41	-12 49 41.3			17.0	4	688
1984 JF1		1984 05 04.30139	15 09 53.71	-12 49 48.3				1	688
1984 JG1	*	1984 05 04.27083	15 10 49.21	+01 26 28.5			16.5	4	688
1984 JG1		1984 05 04.31667	15 10 46.53	+01 26 24.8					688
1984 JH1	*	1984 05 04.27083	15 29 21.77	+01 06 39.4			17.0	4	688
1984 JH1		1984 05 04.31667	15 29 19.67	+01 07 10.1					688
1984 JH1		1984 06 02.17569	15 08 45.62	+04 50 59.0			17.0		688
1984 JH1		1984 06 02.22014	15 08 43.95	+04 51 06.1					688
1984 LE	*	1984 06 01.26597	15 54 25.95	-19 08 46.0			16.5	4	688
1984 LE		1984 06 01.29653	15 54 24.36	-19 08 31.0					688
1984 LF	*	1984 06 01.28125	16 30 32.32	-20 27 06.7			17.0	4	688
1984 LF		1984 06 01.31181	16 30 30.12	-20 26 15.9					688
1984 LG	*	1984 06 01.28125	16 37 29.27	-16 46 27.0			16.0	4	688
1984 LG		1984 06 01.31181	16 37 27.36	-16 45 44.8				2	688
1984 LH	*	1984 06 01.32847	17 03 48.45	-11 32 30.6			16.5	4	688
1984 LH		1984 06 01.35486	17 03 46.99	-11 32 14.4					688
1984 LH		1984 06 02.29375	17 02 59.20	-11 23 51.3			16.5		688
1984 LH		1984 06 02.32917	17 02 57.27	-11 23 32.8					688
1984 LJ	*	1984 06 02.17569	14 59 17.30	+02 55 54.8			16.8	4	688
1984 LJ		1984 06 02.22014	14 59 15.77	+02 56 00.4					688
1984 LK	*	1984 06 02.19792	15 44 14.31	-18 30 49.2			17.0	4	688
1984 LK		1984 06 02.26528	15 44 10.99	-18 30 25.6					688
1984 QA		1984 09 03.34930	00 03 59.88	-13 55 07.5					688

Note 1: right ascension uncertain. 2: declination uncertain. 3 = 1 + 2. 4: discoverer B. A. Skiff. 5 = 4 + 1. 6: remeasurement of positions on MPC 4143.

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY'S ANDERSON MESA STATION. CCD frames with the 1.8-m Perkins reflector. Observers W. A. Baum, T. J. Kreidl and B. Thomsen. Measured and reduced by Kreidl, E. Bowell and L. H. Wasserman. Primary reference stars from the SAO Catalog, secondary

faint-star reference frame from Palomar Sky Survey prints. Contact: E. Bowell, Lowell Observatory, P.O. Box 1269, Flagstaff, AZ 86002, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
2938	1984 05	05.38310	14 49 00.61	+38 38 52.3	688
2938	1984 05	05.40104	14 48 59.64	+38 38 52.2	688
3104	1984 05	29.38478	19 47 08.83	+06 17 29.0	688
3104	1984 05	29.39172	19 47 08.74	+06 17 30.6	688
1983 XF	1984 05	05.16927	08 42 15.94	+23 15 51.8	688
1983 XF	1984 05	05.17841	08 42 17.46	+23 15 44.6	688

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY.

Plates with the 0.33-m photographic telescope. Observer K. Newman. Measured by E. L. G. Bowell using a PDS scanning microdensitometer. SAO reference stars, global solutions. Contact: E. L. G. Bowell, Lowell Observatory, P.O. Box 1269, Flagstaff, AZ 86002, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.
1930 US	1930 10	16.27083	01 11 58.40	+09 58 15.0	1	690
1930 US	1930 10	18.23957	01 10 11.36	+09 49 27.1		690

Note 1: bad measurement; image involved with that of star.

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

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

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
793	1984 07	31.34390	05 08 30.90	+28 50 22.4	16		801
1297	1984 07	24.31437	22 50 17.53	+00 18 20.9	16.5		801
1428	1984 07	31.17992	18 44 50.56	-20 37 29.5	17		801
3097	1984 06	28.16428	16 44 24.03	-11 51 43.3			801
3104	1984 07	24.15791	19 13 55.67	+04 47 12.9			801
3104	1984 07	31.15858	19 09 01.27	+03 49 53.9			801
A908 AA	1984 07	25.22767	21 38 38.44	-00 37 37.2			801
A908 AA	1984 07	31.24480	21 35 29.47	-00 50 38.5			801
1940 WL	1984 07	02.32651	23 54 23.90	-04 31 23.7			801
1940 WL	1984 07	25.29050	00 03 27.37	-04 25 58.8			801
1977 QC5	1984 05	27.25611	16 18 31.26	-21 01 51.0			801
1978 RO	1984 03	27.15917	10 59 35.71	+04 31 34.8			801
1979 QP8	1984 07	02.20735	18 54 48.29	-20 26 17.6			801
1979 QP8	1984 07	25.17164	18 36 38.31	-20 38 15.9			801
1979 RZ	1984 07	03.29340	21 14 54.41	+03 18 55.3			801
1979 RZ	1984 07	24.24322	21 03 35.16	+03 48 47.7			801
1980 FB12	1984 07	26.08114	15 55 39.69	-16 51 10.1			801
1980 PM	1984 07	02.27551	20 49 45.96	-08 54 27.3			801
1980 PM	1984 07	24.22466	20 35 16.61	-11 30 30.5			801
1980 PM	1984 07	31.20189	20 29 19.99	-12 35 40.9			801
1980 UA	1984 07	26.18054	20 37 41.07	-22 02 12.4			801
1981 EE	1984 07	26.20568	21 43 59.61	-19 19 39.8			801
1981 EE	1984 08	24.19142	21 23 00.24	-23 10 03.7			801
1981 EE	1984 08	27.13654	21 20 50.78	-23 30 08.3			801
1981 WW	1984 05	26.27574	16 41 37.01	-20 41 43.0			801
1981 YO	1984 06	30.17647	17 39 12.15	-20 59 36.2			801
1981 YO	1984 07	26.10253	17 20 11.04	-21 49 33.4			801
1982 BJ1	1984 07	29.26745	23 39 13.87	-09 51 16.4			801
1983 CM1	1984 04	02.36556	16 02 57.22	-17 27 29.9			801
1984 FO	1984 07	31.12092	14 55 22.96	+11 19 46.3			801
1984 HA1	1984 07	30.06425	13 01 05.16	+04 12 26.1			801
1984 KB	1984 07	25.15301	16 31 23.68	-13 48 03.8			801

1984 KB		1984 07 29.10227	16 33 54.36	-14 19 06.5					801
1984 KF		1984 07 25.09754	14 05 11.01	+16 33 53.7					801
1984 OH	*	1984 07 26.30629	23 35 54.70	-04 01 08.1			16.5		801

OBSERVATIONS MADE AT THE EUROPEAN SOUTHERN OBSERVATORY.

Plates taken with the 0.40-m GPO astrograph by H. Debehogne and G. Vieira, scanned and measured by Debehogne. Contact: H. Debehogne, Observatoire Royal de Belgique, 3 Avenue Circulaire, B-1180 Brussels, Belgium.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
2707	1984 02	25.38001	11 20 24.51	+08 27 00.8	809
2707	1984 02	25.38624	11 20 24.24	+08 27 02.2	809
2707	1984 02	25.39247	11 20 23.97	+08 27 04.6	809
1984 DG1	* 1984 02	25.32183	12 59 32.73	-20 04 00.3	809
1984 DG1	1984 02	25.33845	12 59 32.50	-20 04 00.5	809
1984 DG1	1984 02	25.35507	12 59 32.27	-20 04 00.7	809

OBSERVATION MADE AT THE MARIA MITCHELL OBSERVATORY BY J. F. WAUGH.

Contact: E. P. Belserene, Maria Mitchell Observatory, Nantucket, MA 02554, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
369	1980 10	15.23044	00 38 22.80	-18 41 45.7	811

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ORBITAL ELEMENTS OF ONE-OPPOSITION MINOR PLANETS.

The orbit computers and authors of double designations are B = C. M. Bardwell, E = E. Bowell, G = D. W. E. Green, I = H. Oishi, M = B. G. Marsden, N = S. Nakano, P = O. Kippes. For further information see MPC 7828.

Planet	B(1,0)	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1971 BD3	14.5	710218	61.23	175.26	248.81	3.72	0.1607	2.5615	23	3	1	M
1971 OS	12.0	710728	318.20	223.40	140.87	22.29	0.1106	3.2221	23	3	1	M
1971 SX3	14.0	710926	261.26	297.24	192.48	14.10	0.1567	2.6379	16	3	1	M
1971 TL3	14.0	711016	4.06	337.87	27.36	8.97	0.0075	2.4772	2	3	2	M
1972 HX	15.0	720503	23.82	82.62	111.50	7.68	0.1681	2.3173	29	3	1	M
1972 HL1	16.0	720503	323.82	251.22	12.93	2.59	0.2169	2.3715	25	8	1	M
1972 RQ	13.5	720920	15.66	165.95	169.60	15.54	0.0936	2.7297	29	3	1	M
1972 TW3	15.5	721010	359.84	17.98	359.42	4.21	0.2582	2.6269	33	3	1	M
1973 RF	13.5	730915	6.46	348.44	5.67	16.54	0.1412	2.6326	54	3	1	M
1973 SG4	14.5	731005	338.62	218.35	188.96	8.58	0.2289	2.3117	33	3	1	M
1973 SL4	15.5	731005	21.35	36.94	310.35	3.97	0.2340	2.3240	33	3	1	M
1973 SO4	15.5	731005	343.78	85.71	321.25	3.81	0.1933	2.2631	33	3	1	M
1973 SP4	15.0	731005	32.15	345.10	353.61	8.74	0.1858	2.4965	33	3	1	M
1973 SS4	12.5	731005	275.98	114.07	17.37	18.67	0.1668	3.1631	33	4	1	M
1973 SW4	14.0	731005	4.38	67.51	312.03	3.05	0.1425	2.4391	33	3	1	M
1973 UV4	14.5	731025	9.60	216.01	175.75	7.56	0.1891	2.2823	59	3	1	M
1974 OD		740801	77.22	260.40	305.19	13.27	0.0511	3.0388	30	6	1	M
1974 OU1	14.0	740801	23.85	264.57	0.83	10.19	0.0452	3.0346	25	4	1	M
1974 RM	15.5	740910	3.72	16.45	323.15	4.57	0.3505	2.8937	10	3	1	M
1974 SB1	15.5	740930	333.19	263.06	138.99	2.74	0.2151	2.3862	29	6	1	M
1975 AN	14.0	750108	37.09	117.52	278.28	20.83	0.2792	2.2872	12	3	1	M
1975 AC1	14.0	750108	72.84	258.73	115.47	16.20	0.1859	2.6466	7	3	1	M
1975 SE	13.5	750925	20.41	334.84	8.62	11.85	0.0549	2.7029	13	5	1	M
1975 TE	15.5	751015	18.19	322.74	24.20	4.20	0.2204	2.2229	7	3	3	M
1975 TU3	15.5	751015	331.52	10.66	44.35	8.88	0.0492	2.2738	33	3	1	M

1975	VM5	14.0	751124	32.82	258.14	124.14	7.32	0.1132	2.5551	31	3	1	M
1976	GQ6	13.0	760412	296.23	127.79	160.01	10.87	0.0949	3.0162	58	3	1	M
1976	QH1	15.5	760919	37.99	125.64	174.60	7.78	0.1906	2.3398	33	3	3	M
1976	SD5	15.4	761009	10.11	153.71	214.62	7.75	0.1780	2.9494	30	4	1	I
1976	SE5	14.9	761009	268.55	279.28	209.55	9.35	0.1248	2.6342	30	4	1	I
1976	SJ5	15.0	761009	12.50	180.16	184.39	4.56	0.1519	2.4933	30	4	1	M
1976	SL5	15.3	761009	336.63	36.20	14.93	5.73	0.0891	2.7503	30	4	1	I
1976	SP5	13.0	761009	16.04	216.32	140.06	1.99	0.2398	3.0901	30	4	1	M
1976	SR5	16.4	761009	337.78	15.31	34.02	7.55	0.1099	2.3268	30	8	1	I
1976	SX5	15.0	761009	20.82	288.83	65.47	2.14	0.1782	3.1493	30	4	1	I
1976	SY5	14.5	761009	4.77	8.32	9.47	3.65	0.1427	2.6333	30	4	1	M
1976	SA6	16.2	761009	70.24	266.15	32.79	2.12	0.1263	2.2295	30	4	1	I
1976	SB6	16.0	761009	19.54	327.73	21.95	6.62	0.2483	2.3714	30	4	1	M
1976	SD6	15.3	761009	354.05	273.43	119.73	0.94	0.0990	3.0183	30	4	1	I
1976	SV10	14.0	761009	134.17	317.51	294.45	2.08	0.0526	2.7210	32	4	1	M
1976	YN	13.8	761208	6.56	347.99	73.18	3.68	0.1914	3.1066	4	3	1	I
1981	EO11	16.5	810317	357.31	256.34	283.10	1.77	0.1660	2.3518	39	0		M
1981	EG45	17.5	810317	308.13	308.49	288.21	3.52	0.1005	2.3374	10	4		G
1981	EH45	18.0	810317	71.34	161.27	294.50	5.92	0.1135	2.4853	11	6		G
1981	EJ45	16.0	810317	221.85	48.30	279.38	4.62	0.1304	3.0916	11	3		G
1981	EK45	17.0	810317	221.43	354.42	330.86	6.09	0.1112	2.3453	11	5		G
1981	EL45	16.5	810317	17.50	260.08	258.70	5.35	0.1003	2.4768	39	6		G
1981	EM45	16.5	810317	214.61	1.14	331.02	10.69	0.0985	2.7457	39	6		G
1981	EN45	17.5	810317	109.66	105.87	304.29	3.24	0.1962	2.2444	39	6		G
1981	EO45	17.5	810317	348.49	322.90	229.42	4.42	0.0284	2.2943	11	3		G
1981	EP45	16.0	810317	304.99	268.73	345.48	13.63	0.1676	3.1832	39	9		G
1981	EQ45	17.5	810317	290.31	99.62	189.68	8.42	0.3328	2.5598	11	3		G
1981	ER45	17.5	810317	38.04	301.12	192.49	6.39	0.1121	2.2556	35	7		G
1981	ES45	14.0	810317	255.93	114.19	201.93	12.89	0.2911	3.2297	11	4		G
1981	ET45	15.5	810317	46.80	276.69	193.37	13.14	0.2479	3.1296	11	4		G
1981	EU45	16.5	810317	53.48	282.03	190.48	16.94	0.1540	2.5412	11	3		G
1981	EV45	16.0	810317	291.33	335.81	294.52	2.63	0.1668	2.9166	39	5		G
1981	EW45	15.0	810317	99.48	227.48	204.82	4.22	0.1036	3.3547	11	3		G
1981	EX45	19.0	810317	28.92	295.25	204.68	5.28	0.1815	2.3088	11	3	2	M
1981	EY45	14.0	810317	146.21	67.74	320.26	4.45	0.1867	3.0835	7	4		G
1981	EZ45	14.5	810317	189.73	183.49	161.47	5.84	0.1137	3.1897	40	6		G
1981	EA46	17.0	810317	320.66	243.20	340.02	0.69	0.1263	2.4232	37	5		G
1981	EB46	18.5	810317	45.31	308.66	158.08	0.87	0.2188	2.1793	5	3	2	M
1981	EC46	16.0	810317	86.00	41.07	7.85	2.27	0.3468	3.1771	5	4	2	M
1981	ED46	17.0	810317	64.68	147.26	310.69	2.22	0.1042	2.8075	9	3		G
1981	EE46	16.0	810317	229.66	3.50	315.23	4.99	0.1808	3.0557	13	7		G
1981	EF46	17.0	810317	297.90	313.53	323.17	4.54	0.3458	2.5121	9	3		M
1981	EG46	16.5	810317	324.09	244.09	341.89	5.02	0.1921	2.5566	9	6		G
1981	EH46	17.5	810317	287.28	81.80	183.54	6.78	0.1595	2.7027	9	3	2	G
1981	EJ46	17.0	810317	29.71	291.30	210.30	2.23	0.0553	2.8142	9	5		G
1981	EK46	18.0	810317	325.28	38.67	184.79	9.45	0.1745	2.8381	9	4	2	G
1981	EL46	17.5	810317	38.21	294.91	166.37	12.15	0.3464	2.9544	5	3		G
1981	EM46	16.5	810317	209.83	89.25	244.25	1.48	0.1875	2.2453	9	4		M
1981	EN46	19.0	810317	347.45	231.75	320.57	2.72	0.1513	2.2944	9	3		G
1981	EO46	17.5	810317	18.57	6.43	133.78	1.21	0.2908	3.2352	9	5	2	G
1981	EP46	16.0	810317	95.54	53.88	354.11	6.94	0.2935	2.6595	9	4	2	G
1981	EQ46	15.5	810317	126.45	232.84	164.51	4.03	0.1318	2.7995	37	6		G
1981	ER46	18.0	810317	284.76	60.90	200.83	1.99	0.0976	2.3525	9	4		G
1981	ES46	16.0	810317	277.92	286.97	358.71	2.27	0.2500	2.9167	9	4	2	G
1981	ET46	15.0	810317	221.07	347.91	337.74	2.31	0.1721	2.7070	9	3		G
1981	EU46	16.0	810317	280.26	119.45	165.93	3.43	0.2625	3.1511	9	4		G
1981	EV46	17.0	810317	229.01	352.52	328.41	1.22	0.1949	2.1827	40	5		G
1981	EW46	16.0	810317	107.80	25.80	31.59	0.88	0.1001	2.9397	9	4		G
1981	EX46	16.5	810317	146.46	139.51	248.01	0.95	0.0464	2.9694	14	5		G

1981	EY46	18.5	810317	52.31	105.28	2.20	3.54	0.1561	2.3894	9	3	G
1981	EZ46	16.0	810317	94.24	1.16	44.14	2.14	0.3484	3.0339	9	6 2	M
1981	EA47	17.5	810317	140.04	36.79	350.25	6.00	0.1420	2.3271	40	5	G
1981	EB47	18.0	810317	2.73	179.93	352.46	11.46	0.1779	2.4416	41	6	G
1981	EC47	17.0	810317	41.07	333.27	153.18	5.62	0.1009	2.5472	5	4 2	G
1981	ED47	18.0	810317	50.76	131.85	337.07	2.06	0.1684	2.3236	40	7	G
1981	EE47	16.0	810317	104.04	257.65	158.35	4.78	0.1617	2.6455	9	5	G
1981	EF47	16.0	810317	47.20	115.41	6.95	3.18	0.0881	2.9141	34	4	G
1981	EG47	17.0	810317	319.27	341.15	246.91	2.60	0.1044	2.6101	13	5	G
1981	EH47	15.5	810317	139.12	55.89	326.44	5.51	0.3319	3.0358	9	3 2	M
1981	EJ47	18.0	810317	311.95	66.10	167.49	6.18	0.0837	2.4193	13	4	G
1981	EK47	15.0	810317	332.95	338.97	234.80	1.99	0.1077	3.9353	9	6	G
1981	EL47	17.0	810317	42.88	239.12	230.92	1.16	0.2668	3.1124	13	5	G
1981	EM47	16.5	810317	279.67	113.02	171.35	2.25	0.2180	2.7310	13	4	G
1981	EN47	16.5	810317	263.38	305.22	359.83	7.75	0.2835	2.2225	13	4	G
1981	EO47	16.0	810317	262.83	138.83	165.06	4.54	0.2532	2.5989	13	5	M
1981	EP47	15.5	810317	117.27	227.12	185.53	10.82	0.1225	3.1212	13	4	G
1981	EQ47	16.5	810317	118.87	280.93	126.54	1.65	0.1487	2.4302	34	7	G
1981	ER47	15.5	810317	154.09	343.23	35.58	2.49	0.1758	2.5166	39	6	G
1981	ES47	17.5	810317	166.52	316.22	53.63	2.41	0.1488	2.2911	13	5	G
1981	ET47	16.0	810317	91.59	68.97	357.56	4.40	0.2107	2.8939	9	5	M
1981	EU47	17.0	810317	42.26	241.07	231.81	0.97	0.2681	3.1822	13	3	G
1981	EV47	16.5	810317	289.68	98.24	178.06	12.70	0.2168	2.7072	13	4	G
1981	EW47	17.5	810317	316.73	57.19	179.25	2.50	0.1390	2.3901	13	3	G
1981	EX47	17.5	810317	165.96	163.41	208.11	1.16	0.1680	2.1539	39	4	G
1981	EY47	15.5	810317	256.11	311.28	351.35	14.80	0.2558	2.8554	8	5 2	G
1981	EZ47	16.5	810317	54.45	80.37	5.59	1.47	0.2940	2.8044	8	5 2	G
1981	EA48	18.0	810317	14.57	179.03	334.65	8.13	0.1811	2.8127	8	4	G
1981	EB48	17.5	810317	179.45	358.14	357.53	3.45	0.0882	2.2529	13	7	G
1981	EC48	18.5	810317	6.49	300.51	228.22	3.52	0.1896	2.5108	6	3	G
1981	ED48	16.5	810317	301.64	265.86	337.73	7.87	0.0555	2.7346	6	5	G
1981	EE48	17.5	810317	331.00	36.26	185.60	12.14	0.1982	2.8651	9	4 2	M
1981	EF48	14.5	810317	8.57	308.92	224.72	1.63	0.0033	3.9669	9	4 2	M
1981	EG48	16.5	810317	290.14	77.36	193.51	7.46	0.1717	2.4984	6	4	M
1981	EH48	15.0	810317	63.82	236.34	226.87	6.27	0.1414	2.5783	34	9	G
1981	EJ48	17.5	810317	66.80	73.46	359.37	21.87	0.3464	2.2969	9	3	G
1981	EK48	17.0	810317	155.28	39.56	338.58	15.52	0.0608	2.5520	8	3	G
1984	FK	14.5	840410	318.59	78.84	167.27	4.88	0.0829	2.2794	34	6	E
1984	OA	14.5	840719	341.49	192.12	134.63	13.73	0.1897	2.4249	8	8	M
1984	OD	15.0	840719	355.63	179.82	137.53	26.57	0.1676	2.4215	4	8	M
1984	OE	14.0	840719	356.88	140.06	178.39	2.06	0.1261	2.8612	4	6 2	M
1984	OF	13.5	840719	356.32	60.89	259.99	1.27	0.1264	3.1442	4	8 2	M
1984	OG	13.5	840719	19.37	136.35	153.95	3.03	0.1455	3.0703	4	8 2	M
1984	QB	14.0	840828	326.04	85.80	305.03	8.81	0.1962	2.4415	9	4	N
1984	QC	11.5	840828	35.84	349.98	311.72	12.04	0.0829	3.1319	9	4	N

Note 1: double designations 1971 BD3 = 1971 DF (M); 1971 OS = 1971 QN2 (M); 1971 SX3 = 1971 TA1 (M); 1972 HX = 1972 KA (M); 1972 HL1 = 1972 JF1 (M); 1972 RQ = 1972 TG5 (M); 1972 TW3 = 1972 RH2 (M); 1973 RF = 1973 UQ (M); 1973 SG4 = 1973 US3 (M); 1973 SL4 = 1973 UB4 (M); 1973 SO4 = 1973 UG4 (M); 1973 SP4 = 1973 UD4 (M); 1973 SS4 = 1973 UB3 (M); 1973 SW4 = 1973 UJ4 (M); 1973 UV4 = 1973 YF (M); 1974 OD = 1974 QX2 (M); 1974 OU1 = 1974 QK3 (M); 1974 RM = 1974 SA (M); 1974 SB1 = 1974 TV (M); 1974 TV = 1974 UQ (P, MPC 6840); 1975 AN = 1975 AX (M); 1975 AC1 = 1975 BD (M); 1975 SE = 1975 TF1 (I, JAM 1624); 1975 TE = 1975 TF2 (M); 1975 TU3 = 1975 VK10 (M); 1975 VM5 = 1975 XA4 (M); 1976 GQ6 = 1976 KN1 (M); 1976 QH1 = 1976 SU1 (M); 1976 SD5 = 1976 UP6 (B; I, JAM 1663); 1976 SE5 = 1976 UF6 (I, JAM 1663); 1976 SJ5 = 1976 UB13 (M); 1976 SL5 = 1976 UD6 (B; I, JAM 1663); 1976 SP5 = 1976 UX14 (M); 1976 SR5 = 1976 UT6 (B; I, JAM 1664); 1976 SX5 = 1976 UL9 (I, JAM 1664); 1976 SY5 = 1976 UB9 (M); 1976 SA6 = 1976 UT8 (I, JAM 1664);

1976 SB6 = 1976 UX8 (M); 1976 SD6 = 1976 US11 (I, JAM 1665); 1976 SV10 = 1976 UA3 (M); 1976 YN = 1976 YB5 (I, JAM 1665). 2: e assumed. 3 = 1 + 2.

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

(101) Helena
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	4.45843		(1950.0)	P	Q
n	0.23746366	Peri.	345.85930	+0.85755971	+0.51180623
a	2.5826840	Node	343.06008	-0.45309379	+0.70425399
e	0.1403254	Incl.	10.16796	-0.24351049	+0.49201696
P	4.15	B(1,0)	9.5		

From 180 observations at 29 oppositions 1868-1983, mean residual 0".8.

(268) Adorea
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	13.65378		(1950.0)	P	Q
n	0.18055239	Peri.	62.82530	-0.99703444	+0.06776134
a	3.1002774	Node	121.03974	-0.07652979	-0.92289102
e	0.1255811	Incl.	2.44014	+0.00809458	-0.37905218
P	5.46	B(1,0)	9.8		

From 124 observations at 25 oppositions 1921-1984, mean residual 0".8.

(365) Corduba
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	318.36040		(1950.0)	P	Q
n	0.21001969	Peri.	215.45842	+0.76236502	-0.64686203
a	2.8030405	Node	184.97890	+0.63300437	+0.75154796
e	0.1543025	Incl.	12.78905	+0.13455497	+0.12940313
P	4.69	B(1,0)	10.3		

From 63 observations at 29 oppositions 1907-1983, mean residual 1".1.

(416) Vaticana
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	334.38226		(1950.0)	P	Q
n	0.21169266	Peri.	197.57448	-0.25690540	+0.94770089
a	2.7882530	Node	57.92234	-0.85763001	-0.13323394
e	0.2197519	Incl.	12.91443	-0.44550014	-0.29002023
P	4.66	B(1,0)	9.2		

From 97 observations at 22 oppositions 1921-1981, mean residual 0".9.

(508) Princetonia
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	153.75283		(1950.0)	P	Q
n	0.17548291	Peri.	192.00527	-0.55881681	+0.81348083
a	3.1597024	Node	44.29120	-0.74044658	-0.40192344
e	0.0239572	Incl.	13.34347	-0.37344697	-0.42036469
P	5.62	B(1,0)	10.3		

From 70 observations at 27 oppositions 1903-1982, mean residual 1".1.

(596) Scheila
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	182.16576	(1950.0)	P	Q
n	0.19672236	Peri. 174.71387	-0.41568522	+0.87755542
a	2.9279719	Node 70.54487	-0.84343167	-0.27362684
e	0.1646756	Incl. 14.68064	-0.34033630	-0.39373194
P	5.01	B(1,0) 10.0		

From 46 observations at 26 oppositions 1906-1979, mean residual 1".1.

(702) Alauda
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	22.38001	(1950.0)	P	Q
n	0.17270900	Peri. 5.62973	+0.42111640	+0.84446151
a	3.1934447	Node 289.64821	-0.84523736	+0.23301476
e	0.0303512	Incl. 20.57539	-0.32899053	+0.48227469
P	5.71	B(1,0) 8.3		

From 64 observations at 19 oppositions 1910-1981, mean residual 0".8.

(1141) Bohmia
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	68.72527	(1950.0)	P	Q
n	0.28802917	Peri. 275.45457	+0.93311894	-0.35228735
a	2.2707974	Node 105.18836	+0.35231539	+0.85577583
e	0.1647831	Incl. 4.27804	+0.07185343	+0.37886851
P	3.42	B(1,0) 14.6		

From 22 observations at 8 oppositions 1930-1980, mean residual 1".0.

(1177) Gonnessia
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	254.89180	(1950.0)	P	Q
n	0.16081894	Peri. 203.34859	-0.07898219	-0.96563909
a	3.3489700	Node 251.92921	+0.95072402	+0.00173180
e	0.0189609	Incl. 15.09622	+0.29980935	-0.25988102
P	6.13	B(1,0) 10.2		

From 75 observations at 25 oppositions 1930-1981, mean residual 0".7.

(2197) Shanghai
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	128.00598	(1950.0)	P	Q
n	0.17558833	Peri. 57.51830	-0.41885833	-0.90729532
a	3.1584376	Node 57.28768	+0.81760208	-0.39457575
e	0.1223420	Incl. 2.52397	+0.39507534	-0.14534505
P	5.61	B(1,0) 11.5		

From 38 observations at 11 oppositions 1955-1984, mean residual 0".8.

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ORBITAL ELEMENTS BY S. NAKANO, TOKYO, JAPAN.

(3105)* A907 PB = 1931 TL3 = 1951 LM = 1958 PC = 1965 SS = 1979 YM5 = 1984 DP

Discovered 1907 Aug. 8 by A. Kopff at Heidelberg. The identifications are by S. Nakano. The identifications A907 PB = 1931 TL3 = 1951 LM = 1958 PC = 1965 SS = 1984 DP were also found by W. Landgraf. The identifications A907 PB = 1958 PC = 1984 DP and A907 PB = 1984 DP were also found by L. D. Schmadel and by F. N. Bowman, respectively.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	234.44144		(1950.0)	P	Q
n	0.28980150	Peri.	198.22752	+0.92784203	+0.36587988
a	2.2615297	Node	140.07103	-0.32660764	+0.89077423
e	0.1934989	Incl.	6.47639	-0.18010167	+0.26954255
P	3.40	B(1,0)	14.2		

Residuals in seconds of arc

070809	024	3.7-	5.1-		840227	809	0.2+	0.3-	840304	809	1.4+	0.8-
070813	024	3.2+	2.0-		840227	809	0.5+	0.8-	840304	809	1.4+	0.8-
070819	024	0.2+	1.1-		840228	809	0.7+	0.4+	840305	809	2.7-	0.2+
311011	690	3.6+	0.9-		840228	809	0.5+	0.5+	840305	809	2.3-	0.3-
311012	690	0.1+	0.0		840228	809	0.3+	0.2+	840305	809	2.4-	0.5-
311013	690	1.2-	0.6-		840229	809	1.0-	0.4+	840306	809	0.6+	0.5-
510607	711	4.5-	0.8+	Y	840229	809	0.8-	0.5+	840306	809	0.6+	0.9-
510608	711	4.5+	2.4-	Y	840229	809	1.1-	0.3+	840306	809	0.7+	1.2-
580807	330	1.8+	1.9-		840301	809	0.6+	0.4-	840308	809	0.4-	0.9-
650921	330	1.9-	1.4-		840301	809	1.0+	1.0-	840308	809	0.4-	0.8-
791218	095	0.8+	2.5-		840301	809	0.5+	0.6-	840308	809	0.3-	0.9-
840223	809	0.6-	0.3-		840302	809	1.8-	0.1+	840309	809	0.5+	1.2-
840223	809	0.0	0.5-		840302	809	1.6-	0.0	840309	809	1.0+	0.8-
840223	809	0.5+	0.6-		840302	809	1.6-	0.1-	840309	809	1.6+	1.4-
840226	809	0.6-	0.1+		840303	809	0.3-	0.2-	840311	809	0.6+	0.2-
840226	809	0.7-	0.0		840303	809	0.1-	0.7-	840311	809	0.4+	0.3-
840226	809	0.8-	0.1+		840303	809	0.1+	0.6-	840311	809	0.6+	0.1-
840227	809	0.4+	0.8-		840304	809	0.9+	0.8-				

1982 SA4 = 1982 UR = 1941 UR

The identification 1982 SA4 = 1941 UR is by S. Nakano. The double designation 1982 SA4 = 1982 UR is by M. Kretlow (MPC 9019).

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

M	247.67148		(1950.0)	P	Q
n	0.28807091	Peri.	299.82979	+0.89197053	+0.44956862
a	2.2705826	Node	33.52007	-0.37920385	+0.80144705
e	0.1922658	Incl.	4.95669	-0.24615649	+0.39442449
P	3.42	B(1,0)	14.9		

Residuals in seconds of arc

411015	062	1.9-	0.6-		820917	095	1.2+	1.6+	821017	688	1.8-	0.8-
411015	062	0.7-	1.8-		820920	095	1.5+	0.8-	821017	688	0.5-	0.1+
411027	062	0.0	0.8+		820922	095	1.4-	0.0	821024	688	0.3+	0.8+
411027	062	3.0+	0.4+		820926	095	0.6+	1.2-	821024	688	0.4-	1.3+

1984 DU = 1964 VB1 = 1975 EH1 = 1975 EG4 = 1977 QN4

The identifications are by W. Landgraf. The identifications 1984 DU = 1975 EH1 = 1975 EG4 = 1977 QN4 were also found by L. D. Schmadel. The identifications 1984 DU = 1964 VB1 and 1984 DU = 1975 EH1 = 1975 EG4 were also found by K. Hurukawa and by S. Nakano, respectively.

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

M	121.42535		(1950.0)	P	Q
n	0.21369453	Peri.	268.02086	+0.52714116	-0.84753251
a	2.7708178	Node	149.90922	+0.82036079	+0.48859994
e	0.1397893	Incl.	7.07256	+0.22165374	+0.20726491
P	4.61	B(1,0)	13.5		

Residuals in seconds of arc

641109	760	0.3-	1.4+	840228	809	0.0	0.0	840305	809	0.1-	0.1+
641109	760	1.8-	1.5-	840228	809	0.5+	0.1+	840305	809	0.3-	0.0
641129	760	0.6+	0.0	840229	809	0.1+	0.1-	840305	809	0.4-	0.4-
641129	760	1.5+	0.9+	840229	809	0.1+	0.1-	840306	809	0.1-	0.4-
750306	095	1.3+	1.0+	840229	809	0.3+	0.2-	840306	809	0.2-	0.4-
750315	095	0.6-	1.6+	840301	809	0.5-	0.0	840306	809	0.2+	0.4-
770818	095	0.2+	1.4-	840301	809	0.4-	0.2-	840308	809	0.2-	0.1+
840225	809	0.4+	0.5-	840301	809	0.2-	0.2-	840308	809	0.3-	0.3-
840225	809	0.8+	0.2-	840302	809	0.2-	0.0	840308	809	0.4-	0.1-
840225	809	0.9+	0.4-	840302	809	0.2-	0.1+	840309	809	0.1-	0.6+
840227	809	0.0	0.3-	840302	809	0.2+	0.3-	840309	809	0.1+	0.2+
840227	809	0.2-	0.1-	840304	809	0.0	0.1-	840309	809	0.0	0.1-
840227	809	0.2-	0.4-	840304	809	0.2-	0.1-				
840228	809	0.1-	0.2-	840304	809	0.4-	0.0				

1984 ES1 = 1977 ED = 1978 QQ

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

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

M	13.57003		(1950.0)	P	Q
n	0.29149857	Peri.	259.15444	-0.47317612	+0.88079005
a	2.2527481	Node	342.57146	-0.78338591	-0.42986918
e	0.1158462	Incl.	3.38759	-0.40300232	-0.19854815
P	3.38	B(1,0)	14.9		

Residuals in seconds of arc

770309	095	0.2-	0.6+	840305	809	0.2+	0.0	840311	809	0.5-	0.1-
770313	095	0.5+	0.2+	840305	809	0.5+	0.1-	840311	809	0.9-	0.2+
780831	095	0.0	0.1-	840308	809	0.2+	0.1-	840311	809	1.0-	0.1-
780905	095	0.4-	1.0+	840308	809	0.1+	0.1-	840313	809	0.5+	0.0
840302	809	0.3-	0.3+	840308	809	0.5+	0.2-	840313	809	0.0	0.2-
840302	809	0.7-	0.3+	840309	809	0.3+	0.0	840313	809	0.3-	0.2+
840302	809	0.7-	0.0	840309	809	0.7+	0.0	840314	809	0.1-	0.0
840304	809	0.1-	0.1+	840309	809	1.0+	0.4-	840314	809	0.0	0.0
840304	809	0.1+	0.3-	840310	809	0.4+	0.0	840314	809	0.1-	0.5+
840304	809	0.1+	0.1+	840310	809	0.2+	0.0				
840305	809	0.3+	0.2-	840310	809	0.1-	0.0				

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ORBITAL ELEMENTS BY K. HURUKAWA, TOKYO ASTRONOMICAL OBSERVATORY.

The identifications are by K. Hurukawa unless otherwise stated.

1934 CU = 1972 TT = 1977 DL1 = 1982 UD1

The key identification 1934 CU = 1982 UD1 is by H. Oishi.

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

M	172.18789		(1950.0)	P	Q
n	0.29877814	Peri.	300.07319	+0.09549603	-0.99279618
a	2.2160022	Node	144.22297	+0.95055946	+0.06937076
e	0.1093823	Incl.	7.10993	+0.29549488	+0.09769056
P	3.30	B(1,0)	15.5		

Residuals in seconds of arc

340204	024(10.5-	15.7+)		770218	381	1.5+	0.8-	821021	688	0.0	0.8-
340209	024	1.0+	0.7+	770218	381	2.3-	0.4+	821021	688	3.0+	1.2-
340214	024	3.3+	3.5+	770219	381	0.1+	0.2-	821021	046	0.8+	1.0+
340305	024(12.2-	3.3-)		770219	381	0.6+	0.9-	821021	046	0.1-	1.2+
340314	024	5.2-	2.1-	821020	046	1.3-	1.4-	821022	046	0.6-	0.7-
721007	095	0.7-	3.9+	821020	046	2.3-	2.4-	821022	046	1.3+	0.1+

1934 RP = 1973 SQ2

The identification is by H. Oishi.

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

M	14.58544		(1950.0)	P	Q
n	0.27763956	Peri.	351.59294	+0.79248466	-0.60949153
a	2.3271052	Node	45.98409	+0.56130934	+0.71471002
e	0.2068064	Incl.	1.76054	+0.23853699	+0.34308842
P	3.55	B(1,0)	15.4		

Residuals in seconds of arc

340907	024	0.4+	2.2-	341008	024	0.6-	0.8-	730925	095	0.8-	1.8+
340908	024	1.6-	1.6+	730922	095	0.3-	2.3-	730928	095	1.3+	0.2+
340917	024	1.5+	1.7+	730923	095	(20.9+	21.5+)				

1976 SZ5 = 1976 UD10 = 1970 QS

The double designation 1976 SZ5 = 1976 UD10 is by H. Oishi.

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

M	201.44192		(1950.0)	P	Q
n	0.17765920	Peri.	178.41325	+0.87632844	+0.48150064
a	3.1338518	Node	152.78860	-0.44228707	+0.81604101
e	0.1627360	Incl.	1.79694	-0.19086805	+0.31974085
P	5.55	B(1,0)	13.7		

Residuals in seconds of arc

700828	095	0.6-	0.6+	760924	095	0.0	0.2-	761022	381	0.1+	0.1+
700830	095	0.6+	0.6-	761022	381	0.0	0.3+	761024	381	0.1-	0.2-

1982 VZ4 = 1955 VU = 1980 FA10 = 1984 DA1

The identification 1982 VZ4 = 1984 DA1 was also found independently by O. Kippes, W. Landgraf and L. D. Schmadel.

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

M	30.20077		(1950.0)	P	Q
n	0.25561265	Peri.	350.28122	-0.87986907	+0.47319872
a	2.4589395	Node	218.06057	-0.43107663	-0.83349638
e	0.0465953	Incl.	4.06874	-0.20000838	-0.28524858
P	3.86	B(1,0)	14.5		

Residuals in seconds of arc

551113	388	0.0	0.0	821214	381	0.7-	0.3+	840308	809	0.0	0.1-
800316	095	0.0	0.0	840226	809	0.3-	1.0-	840308	809	0.4+	0.6-
821114	381	0.6+	0.4+	840226	809	0.3-	0.4-	840308	809	0.6+	0.3-
821114	381	0.2-	0.3+	840226	809	0.2-	0.0	840310	809	0.2-	1.1+
821213	381	0.3-	0.0	840304	809	0.2+	0.5+	840310	809	0.0	1.2+
821213	381	0.3+	0.7-	840304	809	0.4+	0.3+	840310	809	0.2-	1.0+
821213	381	0.8+	0.2+	840304	809	0.9+	0.0	840311	809	0.0	0.2-
821214	381	0.7-	0.1+	840306	809	0.6-	0.0	840311	809	0.1-	0.2-
821214	381	0.6-	0.7-	840306	809	0.3-	0.5-	840311	809	0.0	0.2-
821214	381	0.8+	0.2+	840306	809	0.4-	0.6-				

2535 P-L = 1980 FB5

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

M	123.37321		(1950.0)	P	Q
n	0.17692745	Peri.	215.48524	+0.99031756	+0.13636344
a	3.1424866	Node	136.65409	-0.11700128	+0.92069960
e	0.1592082	Incl.	2.17103	-0.07471162	+0.36567371
P	5.57	B(1,0)	13.9		

Residuals in seconds of arc

600926	675	0.1+	0.2-	601025	675	0.6+	0.6+	800316	809	0.1-	0.2+
600928	675	0.4-	0.5+	601026	675	0.3-	0.8-	800317	809	0.4-	0.5+
600929	675	0.4+	0.6-	800316	809	0.1+	0.5-	800317	809	0.7+	0.2-
601017	675	0.0	0.3+	800316	809	0.0	0.3-	800317	809	0.3-	0.3+
601022	675	0.3-	0.1+	800316	809	0.0	0.6+	800317	809	0.1-	0.6-

4260 P-L = 1974 RK1 = 1983 NX

The key identification 4260 P-L = 1974 RK1 is by C. M. Bardwell, E. Bowell and H. Oishi (MPC 7020), who all found it independently.

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

		(1950.0)	P	Q
M	25.97765			
n	0.21085620	Peri. 143.89268	+0.71425694	-0.69714583
a	2.7956277	Node 260.43126	+0.62649784	+0.67625327
e	0.1297324	Incl. 3.59577	+0.31198955	+0.23805295
P	4.67	B(1,0) 13.3		

Residuals in seconds of arc

600924	675	0.2-	0.8+	600928	675	0.3-	2.6+	740922 095	1.8+	1.0-
600925	675	1.0-	0.9+	740912	095	0.4-	3.5-	830713 688	0.2+	0.9+
600926	675	0.5-	1.6+	740920	095	1.4+	1.5-	830713 688	0.4-	0.3-

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

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

Periodic Comet Takamizawa (1984j)

Epoch 1984 May 20.0 ET = JDE 2445840.5

T 1984 May 24.92741 ET

		(1950.0)	P	Q
q	1.5948388			
n	0.13588233	Peri. 147.52940	+0.03678195	+0.99001045
a	3.7470895	Node 124.23132	-0.94838975	+0.07751067
e	0.5743793	Incl. 9.47575	-0.31496661	-0.11777696
P	7.25			

From 37 observations 1984 July 6-Aug. 28, mean residual 1".1.

(3106)* 1981 EE = 1949 KT = 1973 SD4 = 1983 NF

Discovered 1981 Mar. 9 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	307.66321			
n	0.17536445	Peri. 288.54033	+0.61299279	-0.75936844
a	3.1611251	Node 121.67112	+0.78641122	+0.55980553
e	0.2226049	Incl. 14.85357	+0.07613951	+0.33162831
P	5.62	B(1,0) 12.0		

Residuals in seconds of arc

490529	760	0.6-	0.6+	810325	688	0.7-	1.2-	830714 801	0.2+	0.3+
490529	760	1.2+	0.7+	810330	688	1.0-	0.9-	840726 801	0.7+	1.2-
730926	095	0.0	0.3-	810330	688	0.0	1.3-	840824 801	0.4-	2.6-
810309	688	0.2+	0.9-	820418	688	0.8+	0.2-	840827 801	0.1+	1.8-
810309	688	0.6+	0.9-	820418	688	1.7+	0.7-			
810325	688	0.0	0.7-	820425	688	2.3-	0.2+			

(3107)* 1981 JG2 = A916 OA = 1952 OQ = 1952 PG = 1952 QV = 1962 SL = 1962 VA = 1968 KM = 1975 SB = 1978 NX2

Discovered 1981 May 5 by C. Shoemaker at Palomar. The key identification 1981 JG2 = 1975 SB is by E. Bowell. The double designation 1952 PG = 1952 QV is by S. Kanda (MPC 1855).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	309.56705			
n	0.30160049	Peri. 49.63029	+0.77584127	+0.63030948
a	2.2021557	Node 271.27809	-0.58697708	+0.70485241
e	0.2076482	Incl. 1.60108	-0.23136168	+0.32541211
P	3.27	B(1,0) 14.5		

Residuals in seconds of arc

160728	029	(6.5+	2.1-)	620930	760	2.0+	0.3+	810411	675	3.1-	0.3+
160809	029	(22.0+	3.1+)	621101	760	(63.9-	45.6-)X	810411	675	0.5-	0.6+
520725	760	2.9-	1.7-	680522	095	4.6+	3.8-	810505	675	0.7+	1.2-
520725	760	(9.4+	2.8+)	750928	688	0.8-	0.1-	810505	675	2.8-	0.1-
520802	760	0.7+	0.3-	751004	688	0.9+	0.9-	810506	675	0.8-	0.3-
520802	760	0.3-	1.2-	751010	688	0.3-	1.1-	810506	675	1.8-	0.6-
520828	760	0.7+	0.3+	751011	688	0.2+	0.0	810511	675	2.0+	1.4+
520828	760	0.2-	0.8+	780709	095	0.1+	2.2+				
620930	760	0.3+	0.2-	780711	095	1.1+	1.1+				

1955 RS = 1955 SC2 = 1943 TH = 1966 FF = 1971 QL1 = 1971 SB4 = 1974 FS = 1974 HB1 = 1979 SX1

The double designation 1955 RS = 1955 SC2 is by S. Kanda and O. Kippes (MPC 1453), who found it independently. The identification 1955 RS = 1974 HB1 is by E. Bowell.

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

M	150.49635		(1950.0)	P	Q
n	0.24333597	Peri.	254.39071	+0.02220417	+0.99646785
a	2.5409690	Node	17.49514	-0.78255100	+0.06773690
e	0.1049134	Incl.	15.62819	-0.62219040	-0.04963406
P	4.05	B(1,0)	12.5		

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

431005	062	1.6+	0.9-	550918	760	0.1-	1.0-	710922	095	3.2+	0.9+
431005	062	0.7+	1.8-	550918	760	0.0	3.0+	740319	095	1.8-	0.3-
431005	062	0.5-	2.2-	550919	024	0.7-	0.2+	740422	805	1.2-	2.7-
431006	062	0.6-	2.4-	550920	024	0.2+	1.6+	740424	805	1.0-	2.3-
550913	760	1.1+	0.0	660329	760	(0.03-	0.00+)	790922	095	1.9-	1.8-
550913	760	1.6+	0.0	710824	095	0.6-	1.6-				

1971 SP3 = 1971 UN4 = 1954 SN = 1982 RH1

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

M	128.50743		(1950.0)	P	Q
n	0.17700814	Peri.	13.74887	+0.99683364	-0.07931631
a	3.1415315	Node	350.79489	+0.06922326	+0.90042727
e	0.1976219	Incl.	2.01407	+0.03912577	+0.42771444
P	5.57	B(1,0)	14.5		

Residuals in seconds of arc

540923	760	0.2+	1.4-	711020	805	0.3+	0.4+	820915	046	2.5-	0.8+
540923	760	0.7+	1.3-	711021	095	1.0-	0.6-	820916	046	0.1+	0.8+
710926	805	1.0+	0.5-	820914	046	1.0+	0.4+	820916	046	0.3-	0.3+
710927	805	0.1+	0.4-	820914	046	1.2+	1.1-				
711020	805	0.5-	1.1+	820915	046	0.8-	1.4+				

1976 SU2 = 1968 UV2 = 1972 TA11 = 1980 TA10

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

M	313.30071		(1950.0)	P	Q
n	0.24220277	Peri.	227.79952	+0.57555585	-0.81714089
a	2.5488885	Node	187.27336	+0.80468472	+0.57286476
e	0.1022966	Incl.	14.58392	+0.14566384	+0.06408377
P	4.07	B(1,0)	14.0		

Residuals in seconds of arc

681023	095	0.7-	0.6-	760924	095	3.0-	0.7-	761026	095	1.3-	0.7-
721005	095	1.7+	1.5-	760929	095	0.1+	0.1+	761027	095	3.1-	0.9+
721013	095	1.8+	2.6+	761025	095	2.1+	0.5-	801015	095	2.3+	0.5+

1979 SZ9 = 1935 QC1 = 1974 XO
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 357.83676		(1950.0)	P	Q
n 0.18080601	Peri.	347.71416	+0.97655962	+0.21524711
a 3.0973837	Node	359.85581	-0.19723246	+0.89481515
e 0.1764786	Incl.	0.16404	-0.08620135	+0.39111958
P 5.45	B(1,0)	13.5		

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

350820	078(0.05+	0.02+)X	790928	095	0.9-	1.7-	840803	046	0.5+	1.3-
350824	078(0.02+	0.02+)X	791016	095	2.0-	1.2+	840804	046	0.7+	1.6-
741214	095	0.0 0.2-	791111	095	0.0	1.3-				
790922	095	0.9+ 2.2+	791116	095	1.9+	0.1+				

1981 PM = 1977 GW
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 20.16072		(1950.0)	P	Q
n 0.29296269	Peri.	34.52225	-0.01238926	+0.99734345
a 2.2452362	Node	234.87037	-0.93602162	-0.03681870
e 0.1656454	Incl.	5.03522	-0.35172435	+0.06285248
P 3.36	B(1,0)	14.5		

Residuals in seconds of arc

770410	381	0.2+ 0.3-	810828	688	0.9+	1.1+	840503	688	0.1-	0.3+
770410	381	0.2- 0.2+	810828	688	2.0-	2.6-	840503	688	0.1+	0.5-
810803	688	0.4- 0.5+	810904	688	0.3-	0.0				
810803	688	0.1+ 1.0+	810904	688	1.8+	0.1-				

1981 WU = 1974 RO1
The identification is by C. M. Bardwell.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 328.43727		(1950.0)	P	Q
n 0.29167837	Peri.	245.10658	+0.84697766	-0.53079222
a 2.2518222	Node	146.92924	+0.50532732	+0.78639196
e 0.1665691	Incl.	3.13130	+0.16514583	+0.31598622
P 3.38	B(1,0)	15.0		

Residuals in seconds of arc

740914	095	0.0 2.1+	811202	688	2.9+	3.1+	840801	046	0.6+	0.1-
740914	095	0.5- 0.7-	811202	688	0.4-	0.5+	840802	046	2.6-	1.3-
811117	046	3.2- 0.2+	811220	688	0.6-	2.3-	840802	046	0.9-	1.4+
811117	046	1.7+ 0.8+	811220	688	1.3+	1.0-	840803	046	1.0+	0.1+
811118	330	0.8- 1.6+	811230	688	1.0-	3.5-	840803	046	0.5-	1.4-
811124	688	0.6+ 0.4-	811230	688	0.2+	0.3+				
811124	688	0.6- 1.2-	840801	046	3.3+	1.5-				

1983 BN = 1970 JE
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 29.56675		(1950.0)	P	Q
n 0.21682764	Peri.	145.51367	-0.30051916	+0.94769203
a 2.7440614	Node	106.79128	-0.89839040	-0.24339434
e 0.0178556	Incl.	6.45050	-0.32028567	-0.20649214
P 4.55	B(1,0)	13.0		

Residuals in seconds of arc

700508	095	1.9+ 3.6+	830211	688	0.5-	2.5-	830219	688	1.7-	1.6-
830122	688	0.5+ 1.0-	830211	688	0.2-	1.1-	840601	688	0.8+	1.5-
830122	688	0.5- 1.4+	830219	688	0.7+	1.7-	840601	688	1.4-	0.1-

1984 QA
Epoch 1984 Aug. 28.0 ET = JDE 2445940.5

M	80.87765		(1950.0)	P		Q
n	1.00187203	Peri.	54.83769	-0.88633353		+0.45599416
a	0.9891479	Node	152.03337	-0.46067593		-0.85078797
e	0.4672523	Incl.	9.88570	-0.04680335		-0.26120709
P	0.98	B(1,0)	18.0			

From 13 observations 1984 Aug. 30-Sept. 7.

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

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

(3108)* 1972 QM = 1979 WT3 = 1979 YY3

Discovered 1972 Aug. 18 by L. V. Zhuravleva at the Crimean Astrophysical Observatory. The double designation 1979 WT3 = 1979 YY3 was found by N. S. Chernykh (MPC 7372).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	199.53957		(1950.0)	P		Q
n	0.29625175	Peri.	226.06247	+0.88510119		-0.46504779
a	2.2285828	Node	161.62757	+0.44171467		+0.82719894
e	0.1684882	Incl.	3.28610	+0.14657430		+0.31539254
P	3.33	B(1,0)	15.0			

Residuals in seconds of arc

720818	095	1.4+	1.5+	791116	095	1.5+	0.7+	840308	801 1.4- 1.3-
720904	095	0.1-	1.5-	791218	095	1.4-	1.6-	840327	801 0.5+ 1.2-
720908	095	1.2+	5.2-	821110	801	(13.3+	5.6-)	840328	801 0.5- 1.4-
721004	095	1.5-	2.6+	821216	801	0.1+	0.5-		

(3109)* 1974 DC = 1974 DO1 = 1974 FB1 = A924 EB = 1930 YL = 1936 HA = 1956 SB = 1964 VF1 = 1978 GZ2 = 1979 OQ14 = 1982 FO3

Discovered 1974 Feb. 19 by L. Kohoutek at Bergedorf. The triple designation 1974 DC = 1974 DO1 = 1974 FB1 is by B. G. Marsden.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	165.21621		(1950.0)	P		Q
n	0.25664172	Peri.	256.94190	+0.15783565		+0.98632392
a	2.4523618	Node	22.30784	-0.85054978		+0.16021378
e	0.0856694	Incl.	7.18354	-0.50165024		+0.03868687
P	3.84	B(1,0)	12.5			

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

240304	024	(7.6+	1.6-)	790801	095	2.0-	0.4+	820327	809 0.2- 0.4-
240307	024	1.9-	0.7-	820322	809	0.3+	0.8+	820328	809 0.4- 0.2+
301224	690	2.4+	0.6+	820322	809	0.9+	1.0+	820328	809 0.4- 0.3-
301225	690	(12.7-	0.5-)	820322	809	0.2+	0.6+	820328	809 0.7- 0.1+
360417	078	(0.04-	0.00+)X	820323	809	0.3-	0.8+	820329	809 0.2+ 0.0
360422	012	(45.8-	29.7-)X	820323	809	0.3-	0.3+	820329	809 0.5+ 0.5-
560929	760	(0.06-	0.01+)X	820323	809	0.2-	0.4+	820329	809 0.8+ 0.2-
641101	330	1.4+	0.9-	820324	809	0.0	0.1-	820330	809 0.6+ 0.2-
740216	095	0.1+	0.1+	820324	809	0.1-	0.3+	820330	809 0.3+ 0.3-
740219	029	0.5-	1.0+	820324	809	0.0	0.1-	820330	809 0.3- 0.0
740220	029	1.1-	0.3+	820326	809	0.3+	0.4-	820331	809 0.2+ 0.4-
740223	029	0.9-	0.5+	820326	809	0.9+	1.0-	820331	809 0.7+ 0.6-
740321	095	0.3-	1.7+	820326	809	0.6+	1.0-	820331	809 0.5+ 0.5-
780403	330	0.1-	0.4+	820327	809	0.8-	0.7-		
790720	095	0.1+	0.8-	820327	809	0.8-	1.2-		

(3110)* 1975 SC = 1930 US = 1971 TJ = 1977 ED3 = 1979 QN8 = 1979 SV3 = 1983 RS2

Discovered 1975 Sept. 28 by H. L. Giclas at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	31.48914		(1950.0)	P	Q
n	0.24031416	Peri.	73.74833	+0.47682724	-0.87895789
a	2.5622203	Node	347.76311	+0.79073704	+0.43305166
e	0.1239364	Incl.	2.24304	+0.38388893	+0.19974807
P	4.10	B(1,0)	14.5		

Residuals in seconds of arc

301016	690	(10.7-	1.3-)	770315	381	1.0-	0.7+	830910	688	0.1-	0.4+
301018	690	0.6-	0.0	790820	095	4.4-	2.4-	830910	688	0.9-	2.5-
711010	095	3.2+	0.6+	790924	095	0.0	3.0+	830911	809	1.0-	0.5+
711021	095	1.5-	0.5+	830906	809	0.3-	0.8+	830911	809	0.6-	0.6+
750928	688	1.4+	0.4-	830906	809	0.1-	0.7+	830911	809	0.5-	0.7+
751004	688	0.9+	0.7-	830906	809	0.1+	0.7+	830912	688	2.1+	0.3-
751010	688	0.8-	0.3-	830906	688	0.4+	2.7-	830912	688	3.4+	1.9-
751011	688	1.8-	0.9-	830906	688	1.9-	1.2-	830916	809	0.4-	1.0+
770312	381	0.6-	0.1+	830908	809	0.6+	1.2+	830916	809	0.2+	0.5+
770312	381	0.1+	0.5-	830908	809	0.7+	1.2+				
770315	381	1.6+	0.2+	830908	809	0.8+	1.2+				

(3111)* 1977 DX8 = 1972 TG7 = 1982 UN2

Discovered 1977 Feb. 19 by H. Kosai and K. Hurukawa at the Tokyo Observatory's Kiso Station. The identification 1977 DX8 = 1962 TB (MPC 7778) is invalid.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	225.26830		(1950.0)	P	Q
n	0.29726136	Peri.	291.18036	+0.89652035	-0.44161779
a	2.2235338	Node	95.04098	+0.41834941	+0.81799406
e	0.1614095	Incl.	2.01354	+0.14572245	+0.36859115
P	3.32	B(1,0)	15.0		

Residuals in seconds of arc

721006	095	0.3-	0.7-	821020	046	1.3-	0.3-	821114	046	2.2-	2.0-
721013	095	1.5+	1.4-	821020	046	2.1-	0.6+	821114	046	0.3-	2.5-
770219	381	0.1+	0.3+	821021	046	1.2+	1.7+	821115	704	1.3-	0.1-
770219	381	0.8+	0.4-	821021	046	1.0+	1.7+	821116	046	1.6+	0.3+
770312	381	1.8-	0.8+	821022	046	0.1+	0.0	821116	046	0.6+	0.1+
770312	381	0.7-	0.2-	821022	046	0.2+	0.3+	830118	801	2.6+	2.9+
770315	381	0.4+	0.2-	821111	046	0.9+	1.2+	840404	801	1.2+	2.2-
770315	381	(3.2-	6.4+)	821111	046	0.4-	1.7-	840507	801	1.4-	0.3+

(3112)* 1977 QC5 = 1940 LL = 1944 QF = 1951 KC1 = 1970 SC1 = 1970 WN = 1980 EZ

Discovered 1977 Aug. 22 by N. S. Chernykh at the Crimean Astrophysical Observatory. The key identification and double designation 1977 QC5 = 1970 SC1 = 1970 WN are by L. D. Schmadel (MPC 7607).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	352.26361		(1950.0)	P	Q
n	0.26860641	Peri.	245.69430	+0.69949639	+0.71173109
a	2.3789855	Node	68.85504	-0.62806208	+0.65523132
e	0.1961669	Incl.	3.95759	-0.34094400	+0.25320105
P	3.67	B(1,0)	14.5		

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

400603	078	(14.0+ | 83.8+)X	510529	711	0.0	2.1-	Y	800315	095	0.5+	0.1+
400607	078	(0.01+ | 0.05+)X	700930	095	1.2+	3.5-		811029	330	1.2+	1.5+
400610	078	(0.00+ | 0.06+)X	701126	095	0.5-	3.6-		830214	801	0.1+	0.6+
400612	078	(0.03+ | 0.05+)X	770822	095	1.9-	0.5+		840527	801	0.5-	0.1-
440816	078	(87.4+ | 62.4-)X	770907	095	0.7-	0.7+		840601	688	1.2-	0.9-
440824	078	(81.2+ | 95.6-)X	770918	095	2.2+	2.3+		840601	688	0.3+	1.1-

(3113)* 1978 RO = 1963 TB = 1982 UY

Discovered 1978 Sept. 1 by N. S. Chernykh at the Crimean Astrophysical observatory. The key identification 1978 RO = 1982 UY is by E. Bowell (MPC 7469).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	202.06180		(1950.0)	P	Q
n	0.26073202	Peri.	196.18277	+0.92868089	-0.37078359
a	2.4266463	Node	185.60287	+0.34913222	+0.88168212
e	0.0761122	Incl.	4.96288	+0.12513395	+0.29181529
P	3.78	B(1,0)	14.5		

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

631013	760	0.2-	0.1-	780912	095	0.3+	0.5+		821021	688	1.0-	2.2-
631013	760	0.3+	0.3-	780928	095	1.9+	2.2+		821115	688	2.4+	2.6+
631016	760	(0.06+ | 0.03+)X	781004	095	1.3-	0.3-		821115	688	1.7-	0.1-
780901	095	0.8+	0.3+	781008	095	0.6-	0.0		840302	801	0.6+	1.2+
780905	095	0.0	0.2-	781009	095	3.0-	0.6+		840327	801	0.1-	1.3+
780907	095	0.7+	0.4+	821021	688	0.8+	1.5-		840430	801	0.3+	0.4-

(3114)* 1980 FB12 = 1976 GT = 1977 SG2

Discovered 1980 Mar. 19 at the Cerro El Roble Astronomical Station of the University of Chile. The identifications are by L. D. Schmadel (MPC 8534).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	14.34328		(1950.0)	P	Q
n	0.26181710	Peri.	106.41891	+0.22459269	+0.97444992
a	2.4199369	Node	176.55744	-0.90821003	+0.21019444
e	0.1978937	Incl.	2.23272	-0.35314679	+0.07915583
P	3.76	B(1,0)	14.5		

Residuals in seconds of arc

760401	095	0.5+	1.4-	800414	805	0.8+	0.3+		840601	688	1.5-	1.7-
770919	095	0.2-	0.0	800415	805	0.7+	0.3-		840601	688	0.5+	1.5-
800319	805	1.1-	0.0	800416	805	1.4+	0.6+		840726	801	2.5+	4.1+
800320	805	0.7-	2.1+	840501	801	0.5-	0.6-					
800323	805	1.3-	1.4+	840525	801	0.2-	0.8-					

(3115)* 1981 PL = 1954 AF = 1961 XT

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

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	185.51595		(1950.0)	P	Q
n	0.23795708	Peri.	171.44617	+0.33900797	-0.92466947
a	2.5791126	Node	258.59733	+0.85230486	+0.37988968
e	0.1437606	Incl.	10.18745	+0.39830894	-0.02588821
P	4.14	B(1,0)	12.5		

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

540102	020(0.04+	0.00+)X	810925	688	1.9+	0.7-	830113	704	2.9+	1.6-
611208	760	1.3-	0.7+	821214	688	1.2-	3.6-	830114	704	3.0+	3.3+
611208	760	1.4+	1.4-	821214	688	0.1+	2.8-	830118	801(17.7+		1.6+)
810803	688	0.5-	0.0	821222	801	0.9-	0.3-	830210	675	2.1-	0.4+
810803	688	0.3-	0.1-	830110	675	0.2+	1.0-	830215	675	1.6-	0.6-
810831	688	0.1+	1.8-	830110	675	0.2-	1.3-	840423	474	0.7-	1.9-
810831	688	0.8+	0.8-	830111	675	0.3-	0.4+	840423	474	0.4-	1.8-
810903	688	0.4-	1.3-	830111	552	1.8-	1.7-	840428	474	0.9-	0.4+
810903	688	0.1+	1.2-	830111	552	1.6-	2.2-	840428	474	1.6-	0.3+
810904	688	0.7-	0.0	830112	704	0.1-	2.2+	840503	688	0.2+	1.8-
810904	688	0.6+	0.1-	830112	675	0.4-	0.4-	840503	688	2.0+	2.2-
810925	688	2.0+	1.4-	830113	704	1.4+	1.4+				

(3116)* 1983 CF = 1938 UM = 1948 TN = 1951 NC = 1973 DC = 1974 HR2

Discovered 1983 Feb. 11 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

			(1950.0)	P	Q
M	319.11465				
n	0.29626133	Peri.	270.18047	+0.98088438	+0.17045980
a	2.2285347	Node	80.00580	-0.11772897	+0.90389044
e	0.2002532	Incl.	5.46882	-0.15493777	+0.39233342
P	3.33	B(1,0)	13.5		

Residuals in seconds of arc

381022	031(21.5-	29.0+)X	740424	805	0.3+	0.2+	830219	688	1.8-	2.4-
481009	062	0.5+	0.8-	740425	805	0.2-	0.6+	840501	801	0.5+	0.7-
481009	062	1.6+	1.0-	830211	688	1.0+	0.8-	840525	801	0.5+	0.2-
510702	078(10.0+	20.2+)Y	830211	688	1.2+	0.1-	840602	688	2.9-	2.0-
730227	029	1.2+	0.9+	830215	688	0.7-	0.5+	840602	688	1.2+	1.2-
730227	029	0.6+	0.1+	830215	688	1.4-	0.1-				
730309	029	0.7-	0.8+	830219	688	0.6-	0.1-				

(3117)* 1983 CM1 = 1962 XV1 = 1973 AA2 = 1975 NR = 1976 UE5 = 1978 EY = 1979 HL2

Discovered 1983 Feb. 11 by N. G. Thomas at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

			(1950.0)	P	Q
M	321.05116				
n	0.20508666	Peri.	221.75896	+0.70382074	+0.70812706
a	2.8478106	Node	93.06139	-0.63581539	+0.66342376
e	0.0598329	Incl.	3.24366	-0.31682036	+0.24171260
P	4.81	B(1,0)	13.0		

Residuals in seconds of arc

621204	033	0.6-	1.4-	790424	095	0.2-	1.9+	830219	688	0.7-	1.1+
621205	033	1.6+	1.3-	830211	688	0.1+	1.1-	840402	801	0.5-	1.8+
730101	095	0.8+	1.4+	830211	688	0.2+	0.2-	840503	688	0.7+	1.6-
750711	095	1.2-	1.8+	830215	688	0.5+	1.6-	840503	688	0.7+	1.4-
761030	095	(4.8+	8.6-)	830215	688	0.4+	0.1+	840602	688	2.6+	2.0-
780305	095	1.0-	2.9+	830219	688	1.1-	0.2+	840602	688	2.8-	0.7-

A916 PC = A916 SB = 1969 RV = 1982 FW2

The double designation A916 PC = A916 SB is by S. Nakano and is valid (contrary to what is indicated on MPC 1013 and MPC 1040).

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

			(1950.0)	P	Q
M	127.65319				
n	0.27994968	Peri.	18.45360	+0.81245691	+0.56773024
a	2.3142855	Node	306.22610	-0.55345928	+0.67950352
e	0.1526509	Incl.	9.46457	-0.18329376	+0.46471209
P	3.52	B(1,0)	13.5		

Residuals in seconds of arc

160729	094	1.2+	2.0-	820321	809	1.7-	0.1-	820326 809	0.5+	0.6+
160808	094	(4.8+	20.6-)	820321	809	1.3-	0.2+	820327 809	0.7-	0.2+
160809	029	5.8+	4.2+ Y	820321	809	0.2+	0.1+	820327 809	0.2-	0.9+
160827	029	(11.0+	11.8+)Y	820322	809	0.8+	0.2-	820327 809	0.5-	0.7+
160923	029	9.7-	2.5- Y	820322	809	1.0-	0.7+	820328 809	1.2+	0.6+
690910	095	(3.1-	14.0+)	820323	809	0.6+	0.7+	820328 809	0.3+	0.2+
690910	095	2.0-	4.1+	820323	809	0.8+	1.3+	820328 809	0.8-	0.9+
820317	809	0.1+	0.7-	820323	809	0.5-	0.6+	820331 809	1.1+	1.5-
820317	809	0.2-	0.5-	820324	809	1.7+	0.1-	820331 809	0.4+	0.6-
820317	809	0.1-	0.3-	820324	809	1.7+	0.1-	820331 809	0.3-	0.7-
820318	809	1.8-	0.2+	820324	809	1.6+	0.1+	820401 809	0.6+	0.5-
820318	809	0.2+	0.9+	820326	809	0.5+	0.2+	820401 809	0.4+	0.1+
820318	809	0.1-	0.5+	820326	809	0.9-	0.9+	820401 809	0.2+	0.2-

1972 RU2 = 1972 QJ = 1949 QJ1 = 1949 QN1 = 1955 EL

The double designation 1972 RU2 = 1972 QJ is by B. G. Marsden. The double designation 1949 QJ1 = 1949 QN1 is published on MPC 1256.

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

M	33.40163		(1950.0)	P	Q
n	0.25762206	Peri.	53.42827	+0.94998336	-0.30542590
a	2.4461413	Node	324.22494	+0.23887222	+0.84504413
e	0.1261241	Incl.	6.40009	+0.20117572	+0.43887975
P	3.83	B(1,0)	14.0		

Residuals in seconds of arc

490821	760	0.9-	1.8+	550314	760	0.2-	0.4-	720908 095	0.6-	2.5+
490821	760	0.5+	0.3+	550314	760	0.7+	0.6+	721004 095	0.0	0.2-
490827	760	0.8-	0.6-	720818	095	(1.8+	7.4-)			
490827	760	1.4+	1.0-	720904	095	0.6+	1.8-			

1973 DT = 1973 GW = 1977 BV = 1980 WN

The double designation 1983 DT = 1973 GW is by B. G. Marsden.

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

M	289.10936		(1950.0)	P	Q
n	0.22393674	Peri.	343.72287	+0.05653813	-0.97357938
a	2.6856743	Node	102.62720	+0.93939622	-0.02317516
e	0.1572667	Incl.	13.10419	+0.33813927	+0.22716975
P	4.40	B(1,0)	14.0		

Residuals in seconds of arc

730228	029	0.9-	0.2+	730401	095	0.8+	1.1+	801130 095	0.3-	0.4-
730228	029	0.2+	0.1-	730404	095	0.6-	0.9+			
730309	029	0.3-	0.3-	770120	095	0.5-	0.8+			

1973 UU4 = 1973 UW4 = 1973 YF4 = 1980 RY3 = 1980 TM7

The triple designation 1973 UU4 = 1973 UW4 = 1973 YF4 is by B. G. Marsden.

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

M	40.52093		(1950.0)	P	Q
n	0.27365097	Peri.	196.49968	+0.97352036	-0.22847742
a	2.3496630	Node	176.68028	+0.22162300	+0.93526079
e	0.2302283	Incl.	7.43664	+0.05604775	+0.27034297
P	3.60	B(1,0)	15.5		

Residuals in seconds of arc

731021	688	0.1+	0.1-	731101	688	1.7+	3.5+	801010 095	2.8+	0.5-
731023	688	0.4-	0.9-	731219	095	1.3-	2.5-	801015 095	2.5-	1.9+
731031	688	1.1+	1.1+	800906	095	1.5-	2.1-			

1974 SL = 1974 TO = 1946 GE = 1951 ER = 1964 VN = 1969 TS5
= 1979 SB3 = 1983 HM

The double designation 1974 SL = 1974 TO is by B. G. Marsden.

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

		(1950.0)	P	Q
M	15.78506			
n	0.18766694	Peri. 114.89908	+0.59864103	+0.80021841
a	3.0214244	Node 192.07371	-0.78268875	+0.57486173
e	0.0826426	Incl. 9.84624	-0.17037382	+0.17083470
P	5.25	B(1,0) 13.0		

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

460405	078(42.2-	18.3-)X	691017 095	2.1+	2.0+	740923 095	(5.0-	6.8+)
510305	760	1.2+ 0.4+	740919 095	2.7-	0.6+	741009 095	0.7-	2.0+
510305	760	1.5- 1.1-	740920 095	0.4+	4.4-	790923 095	1.9+	0.4+
641104	760(0.04-	0.02-)X	740921 095	0.0	2.7+	830418 688	0.5+	0.6+
691015	095	0.1+ 1.0-	740922 095	0.6+	2.4-	830418 688	0.9-	0.7+

1975 VN1 = 1975 XA7 = 1975 YJ = A903 UF = 1952 QL = 1964 VW1
= 1964 WD = 1969 TA5 = 1978 JV2 = 1980 TX7

The triple designation 1975 VN1 = 1975 XA7 = 1975 YJ is by B. G. Marsden.

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

		(1950.0)	P	Q
M	239.73965			
n	0.17788244	Peri. 210.66341	+0.71517733	-0.69866573
a	3.1312292	Node 193.71308	+0.65690943	+0.68152130
e	0.1038683	Incl. 4.76372	+0.23872869	+0.21770369
P	5.54	B(1,0) 13.0		

Residuals in seconds of arc

031027	024	0.1- 2.5+	691014 095	2.6+	0.6+	780509 095	0.5+	0.3-
520828	024	0.7- 0.3+	751102 095	2.8-	3.2-	801010 095	0.6-	0.0
520915	024	0.7- 2.0-	751202 330	(15.6+	4.7+)	801015 095	0.5+	0.4+
641110	330	0.6- 1.7+	751222 330	1.1+	0.3-			
641129	760(39.4-	21.2-)X	751230 330	0.6+	1.1-			

1976 GR6 = 1976 KL1 = 1983 NO

The double designation 1976 GR6 = 1976 KL1 is by B. G. Marsden.

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

		(1950.0)	P	Q
M	231.84521			
n	0.30136835	Peri. 75.75594	-0.94920452	+0.30193390
a	2.2032908	Node 121.74945	-0.31358827	-0.88450116
e	0.0876365	Incl. 5.97934	-0.02594572	-0.35565940
P	3.27	B(1,0) 14.5		

Residuals in seconds of arc

760403	095	1.4- 0.5+	830710 688	0.8+	1.1-	830713 688	0.5+	0.9+
760407	095	1.6+ 0.4-	830710 688	0.9-	0.2+			
760530	095	0.2- 0.1-	830713 688	0.4-	0.0			

1984 HA1

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	271.81222			
n	0.08560425	Peri. 129.59345	+0.62650933	+0.77938748
a	5.0988530	Node 179.11999	-0.77930319	+0.62626022
e	0.0699104	Incl. 24.70985	+0.01313755	-0.01879593
P	11.51	B(1,0) 9.0		

From 11 observations 1984 Apr. 19-July 30, mean residual 0".7.

NEW NAMES OF MINOR PLANETS.

(2322) Kitt Peak = 1954 UQ2
Discovered 1954 Oct. 28 at the Goethe Link Observatory, Indiana University.
Named to commemorate two important events in the history of the Kitt Peak National Observatory. Members of the Papago Tribal Council and the Schuk Toak District Council visited the Steward Observatory on the evening of 1955 Oct. 28, just one year after the discovery of this minor planet. This was the first step in arranging for the establishment of an astronomical observatory on Kitt Peak. The Association of Universities for Research in Astronomy (AURA) was incorporated on 1957 Oct. 28. Name proposed by F. K. Edmondson.

(2326) Tololo = 1965 QC
Discovered 1965 Aug. 29 at the Goethe Link Observatory, Indiana University.
Named to commemorate the founding of the Cerro Tololo Inter-American Observatory in northern Chile on 1962 Nov. 23. CTIO is funded by the National Science Foundation and operated by AURA. Name proposed by F. K. Edmondson.

(2334) Cuffey = 1962 HD
Discovered 1962 Apr. 27 at the Goethe Link Observatory, Indiana University.
Named in honor of James Cuffey, a member of the Indiana University faculty from 1946 to 1966 and then of the New Mexico State University faculty until 1976. He played a major role in arranging for the transfer of the 10-inch Cooke triplet from the Cincinnati Observatory to the Goethe Link Observatory in 1948 and thus the start of the Indiana minor-planet program. Name proposed by F. K. Edmondson.

(2351) O'Higgins = 1964 VD
Discovered 1964 Nov. 3 at the Goethe Link Observatory, Indiana University.
Named in memory of Bernardo O'Higgins (1778-1842) and to honor the people of Chile, who regard him as the "Father of the Country". Chile declared independence from Spanish rule on 1810 Sept. 18. This became a reality on 1817 Feb. 12, when the Spaniards were defeated by General O'Higgins and his forces in a decisive battle at Chacabuco. Name proposed by F. K. Edmondson.

(2364) Seillier = 1978 GD
Discovered 1978 Apr. 14 by H. Debehogne at the European Southern Observatory.
Named by the discoverer in honor of his mother and her family.

(2405) Welch = 1963 UF
Discovered 1963 Oct. 18 at the Goethe Link Observatory, Indiana University.
Named in honor of David F. ("Kelly") Welch, AURA Corporate Staff Executive from 1978 to 1983. He upgraded AURA administrative and operational procedures and brought modern technology into the corporate office. He also played a major role in the preparation of the successful proposal to NASA for AURA to establish and operate the Space Telescope Science Institute. Following (2404) Antarctica, this planet also acknowledges Welch's earlier career in the U.S. Navy, which culminated in his service as commander of the Naval Support Force for the scientific bases in Antarctica during 1969-1971. Name proposed by F. K. Edmondson.

(2417) McVittie = 1964 CD

Discovered 1964 Feb. 15 at the Goethe Link Observatory, Indiana University.

Named in honor of George C. McVittie on the occasion of his 80th birthday, 1984 June 5. Born in Turkey, he was educated and spent his early career in the U.K. Moving to the U.S., he served as head of the astronomy department at the University of Illinois from 1952 to 1972, during which time he converted a one-man undergraduate teaching department into a major graduate and research center. His own research was theoretical, involving relativity and cosmology, but he built up observational optical astronomy and added radio astronomy to the department to produce a well-rounded program. From 1961 to 1970 he served as secretary of the American Astronomical Society. Following his formal retirement he returned to the U.K. to a position at the University of Kent. Name proposed by F. K. Edmondson.

(2460) Mitlincoln = 1980 TX4

Discovered 1980 Oct. 1 by L. G. Taff and D. Beatty at the Lincoln Laboratory ETS, New Mexico.

The name honors the Lincoln Laboratory and its association with the Massachusetts Institute of Technology.

(2662) Kandinsky = 4021 P-L

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

Named in memory of the Russian-born painter Vassily Kandinsky (1866-1944), one of the first and best of the abstract painters.

(2815) Soma = 1982 RL

Discovered 1982 Sept. 15 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named for the Soma cube, a three-dimensional mathematical game invented by the Danish writer Piet Hein and popularized in articles by Martin Gardner. Name proposed by the discoverer, following a suggestion by J. Meeus.

(2816) Pien = 1982 SO

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

Named in honor of Armand Pien, of the Royal Meteorological Institute, Uccle. Well known for his popularization of meteorology and astronomy, he has presented televised weather forecasts in Belgium for more than 30 years. Name proposed by the discoverer, following a suggestion by J. Meeus.

(2817) Perec = 1982 UJ

Discovered 1982 Oct. 17 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named for Georges Perec, who wrote a 300-page novel "La Disparition" (Paris, 1969) without using the letter "e". This "eccentricity" would seem to suit him to studies of minor planets. Name proposed by the discoverer, following a suggestion by J. Meeus.

(2861) Lambrecht = 1981 VL2

Discovered 1981 Nov. 3 by F. Borngen and K. Kirsch at Tautenburg.

Named in memory of Hermann Lambrecht (1908-1983), professor at the University of Jena and director of the University Observatory from 1948 to 1968. An authority on the physics and chemistry of interstellar gas and dust particles, he worked on a wide number of astronomical topics and was also well known as a popularizer of astronomy.

(2874) Jim Young = 1982 TH

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

Named in honor of James W. Young, resident astronomer at the Table Mountain Observatory of the Jet Propulsion Laboratory. In recent years he has obtained photoelectric lightcurves for more than 100 minor planets, thus contributing about a third of the currently known rotation rates. Name proposed by the discoverer, following a suggestion by A. W. Harris.

(2875) Lagerkvist = 1983 CL

Discovered 1983 Feb. 11 at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Claes-Ingvar Lagerkvist, planetary astronomer at the Uppsala Astronomical Observatory, well known for his observational work on shapes and spin properties of minor planets, particularly small ones. His research has also provided extensive astrometric data and has led to the numbering of six of his discoveries as of July 1984. An inspiring teacher with a great ability to stimulate the interest and research activity of young students, Lagerkvist has made important contributions to the popularization of astronomy in Sweden in recent years. Citation prepared by H. Rickman.

(2904) Millman = 1981 YB

Discovered 1981 Dec. 20 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Peter MacKenzie Millman, former head of Upper Atmosphere Research and, since his formal retirement, a guest scientist at the Herzberg Insititute of Astrophysics of the National Research Council of Canada. Well known for his research on meteors and for his interest in meteorites, comets and planets, he has served as president of the Royal Astronomical Society of Canada and of the Meteoritical Society, as well as president of Commission 22 and chairman of the Working Group on Planetary System Nomenclature of the IAU. Name proposed by the discoverer, following a suggestion by C. E. Spratt.

(2905) Plaskett = 1982 BZ2

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

Named in memory of John Stanley Plaskett (1865-1941), director of the Dominion Astrophysical Observatory in Victoria from its founding in 1917 to 1935; and of his son, Harry Hemley Plaskett (1893-1980), Savilian professor of astronomy at the University of Oxford and director of the Oxford observatory from 1932 to 1960. Known for his work on the radial velocities of O- and B-type stars that provided observational confirmation of the theory of galactic rotation, J. S. Plaskett was also particularly associated with the massive Plaskett’s star. The younger Plaskett made far-reaching contributions to stellar spectroscopy and spectrophometry and to solar physics; as president of the Royal Astronomical Society just after World War II he was instrumental in bringing into being the 2.5-m telescope, completed in 1967 and initially installed at the Royal Greenwich Observatory at Herstmonceux. Both father and son were awarded the gold medal of the Royal Astronomical Society. Name proposed by the discoverer following a suggestion by C. E. Spratt.

(3030) Vehrenberg = 1981 EH16

Discovered 1981 Mar. 1 by S. J. Bus at Siding Spring in the course of the U.K.-Caltech Asteroid Survey.

Named in honor of Hans Vehrenberg of Dusseldorf: publisher, amateur astronomer, and creator of atlases of the sky. His "Falkauer Atlas" and

"Atlas Stellarum" are widely used by amateur and professional astronomers interested in or conducting research on minor planets and comets. His other publications include the popular "Atlas of Deep-Sky Splendors". Name proposed by the discoverer following a suggestion by T. P. Kohman and J. U. Gunter.

(3056) INAG = 1978 VD1

Discovered 1978 Nov. 1 by K. Tomita at Caussols.

Named in honor of the French Institut National d'Astronomie et de Geophysique, at which the 0.9-m Schmidt telescope used for the discovery of this object was constructed. The 3.6-m Canada-France-Hawaii telescope and the 2-m Pic-du-Midi telescope were also built at INAG.

(3058) Delmary = 1981 EO17

Discovered 1981 Mar. 1 by S. J. Bus at Siding Spring in the course of the U.K.-Caltech Asteroid Survey.

Named in honor of the American artist Delmary Rose Schanz (1938-), whose seascapes, rendered in the glazed oil technique of the Flemish masters, have inspired art enthusiasts internationally. Highly respected for her sensitive use of light and color, the artist has produced an extensive body of work widely acclaimed by collectors and peers for its spiritual power and technical mastery.

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EPHEMERIDES.

Periodic Comet Takamizawa (1984j) Elements MPC 9070

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1984	08 28	21 06.24	-23 40.5	0.889	1.860	156.7	12.4	(17.9)
1984	09 07	21 07.35	-24 27.2					
1984	09 17	21 10.97	-24 44.5	1.097	1.964	138.3	19.9	(18.6)
1984	09 27	21 16.98	-24 36.7					
1984	10 07	21 25.10	-24 08.3	1.365	2.077	122.2	24.0	(19.3)
1984	10 17	21 34.93	-23 23.4					
1984	10 27	21 46.12	-22 25.1	1.678	2.196	107.8	25.5	(20.0)
1984	11 06	21 58.36	-21 16.1					
1984	11 16	22 11.35	-19 58.5	2.024	2.318	94.3	25.2	(20.7)
1984	11 26	22 24.89	-18 34.1					
1984	12 06	22 38.82	-17 04.4	2.387	2.442	81.4	23.5	(21.3)
1984	12 16	22 52.99	-15 30.8					
1984	12 26	23 07.31	-13 54.3	2.754	2.567	68.7	20.9	(21.8)

1984 QA a,e,i = 0.99, 0.47, 10 Elements MPC 9073

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 07	23 42.30	-17 38.3	0.183	1.185	164.9	12.8	15.0
1984	09 12	23 18.66	-21 10.8					
1984	09 17	23 00.93	-23 24.0	0.254	1.243	157.3	18.2	15.9
1984	09 22	22 48.01	-24 43.1					
1984	09 27	22 38.94	-25 25.1	0.338	1.293	144.8	26.5	16.8
1984	10 02	22 33.00	-25 41.2					
1984	10 07	22 29.55	-25 39.2	0.432	1.336	134.1	32.5	17.6
1984	10 12	22 28.11	-25 24.1					
1984	10 17	22 28.27	-24 59.2	0.532	1.372	124.9	36.6	18.2
1984	10 22	22 29.77	-24 26.9					
1984	10 27	22 32.38	-23 48.5	0.637	1.401	116.7	39.3	18.7
1984	11 01	22 35.93	-23 05.3					
1984	11 06	22 40.26	-22 18.2	0.745	1.424	109.3	41.1	19.1
1984	11 11	22 45.25	-21 27.9					

1984 11 16	22 50.79	-20 34.7	0.854	1.440	102.5	42.1	19.4
1984 11 21	22 56.81	-19 38.9					
1984 11 26	23 03.27	-18 40.9	0.961	1.449	96.1	42.6	19.7
1984 12 01	23 10.11	-17 40.9					
1984 12 06	23 17.29	-16 38.9	1.065	1.451	90.0	42.8	19.9
1984 12 11	23 24.75	-15 35.4					
1984 12 16	23 32.48	-14 30.3	1.164	1.447	84.3	42.6	20.1
1984 12 21	23 40.47	-13 23.7					
1984 12 26	23 48.69	-12 15.8	1.257	1.437	78.7	42.2	20.3

1981 WU a,e,i = 2.25, 0.17, 3 Elements MPC 9072

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 08 28	21 25.66	-15 05.5	1.056	2.048	164.6	7.5	16.8
1984 09 07	21 18.01	-16 03.9					
1984 09 17	21 13.11	-16 46.8	1.126	2.014	141.8	18.0	17.2
1984 09 27	21 11.65	-17 11.6					
1984 10 07	21 13.84	-17 17.3	1.260	1.982	122.2	25.3	17.6
1984 10 17	21 19.47	-17 04.8					
1984 10 27	21 28.15	-16 35.0	1.433	1.954	105.8	29.3	17.9
1984 11 06	21 39.44	-15 49.0					
1984 11 16	21 52.87	-14 47.8	1.622	1.929	92.0	30.8	18.2

1979 SZ9 a,e,i = 3.10, 0.18, 0 Elements MPC 9072

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 08 28	21 50.02	-13 15.8	1.569	2.571	170.8	3.6	16.5
1984 09 07	21 43.12	-13 50.4					
1984 09 17	21 37.84	-14 16.0	1.652	2.562	148.3	11.9	16.9
1984 09 27	21 34.80	-14 30.0					
1984 10 07	21 34.34	-14 31.3	1.818	2.555	127.7	18.0	17.2
1984 10 17	21 36.48	-14 19.9					
1984 10 27	21 41.07	-13 56.1	2.040	2.551	109.6	21.5	17.6
1984 11 06	21 47.88	-13 20.7					
1984 11 16	21 56.57	-12 34.4	2.291	2.551	93.6	22.8	17.9

1976 SU2 a,e,i = 2.55, 0.10, 15 Elements MPC 9071

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 08 28	23 08.04	+05 14.4	1.467	2.445	161.5	7.5	16.9
1984 09 07	23 00.80	+03 31.2					
1984 09 17	22 53.44	+01 34.3	1.432	2.425	168.3	4.8	16.8
1984 09 27	22 46.98	-00 25.8					
1984 10 07	22 42.36	-02 18.2	1.502	2.405	147.4	12.9	17.1
1984 10 17	22 40.17	-03 54.6					
1984 10 27	22 40.69	-05 10.1	1.658	2.386	126.4	19.6	17.4
1984 11 06	22 43.91	-06 02.7					
1984 11 16	22 49.63	-06 32.7	1.868	2.368	108.0	23.4	17.8

1973 DT a,e,i = 2.69, 0.16, 13 Elements MPC 9077

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 08 28	23 48.63	-20 51.2	1.751	2.710	157.1	8.3	17.6
1984 09 07	23 41.26	-22 18.0					
1984 09 17	23 32.90	-23 30.3	1.715	2.677	158.9	7.8	17.5
1984 09 27	23 24.56	-24 20.6					
1984 10 07	23 17.28	-24 44.7	1.780	2.644	142.5	13.3	17.7
1984 10 17	23 11.91	-24 42.0					
1984 10 27	23 08.96	-24 14.7	1.927	2.611	123.5	18.5	17.9
1984 11 06	23 08.66	-23 26.2					
1984 11 16	23 10.96	-22 20.3	2.124	2.577	105.9	21.7	18.2
1984 11 26	23 15.64	-21 00.3					
1984 12 06	23 22.45	-19 29.0	2.345	2.544	90.0	22.8	18.4

1972 RU2 a,e,i = 2.45, 0.13, 6 Elements MPC 9077

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 09 17	04 49.57	+30 18.2	1.772	2.170	99.0	27.2	17.6
1984 09 27	04 59.36	+31 06.3					
1984 10 07	05 06.25	+31 49.9	1.570	2.185	114.6	24.6	17.2
1984 10 17	05 09.76	+32 28.8					
1984 10 27	05 09.44	+33 01.4	1.400	2.202	133.2	19.2	16.9
1984 11 06	05 05.14	+33 24.3					
1984 11 16	04 57.20	+33 33.1	1.289	2.222	154.3	11.1	16.5
1984 11 26	04 46.58	+33 23.6					
1984 12 06	04 34.89	+32 54.5	1.269	2.244	169.1	4.8	16.3
1984 12 16	04 23.97	+32 09.0					
1984 12 26	04 15.39	+31 14.2	1.353	2.268	152.0	11.8	16.7
1985 01 05	04 10.19	+30 18.3					
1985 01 15	04 08.70	+29 27.8	1.525	2.293	130.9	18.9	17.2
1985 01 25	04 10.78	+28 46.2					
1985 02 04	04 16.12	+28 14.7	1.758	2.319	112.3	23.1	17.6
1985 02 14	04 24.23	+27 52.1					
1985 02 24	04 34.67	+27 36.5	2.023	2.346	96.2	24.8	18.0

1955 RS a,e,i = 2.54, 0.10, 16 Elements MPC 9071

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 09 17	05 13.11	+34 29.7	2.506	2.757	93.6	21.3	17.2
1984 09 27	05 19.94	+35 43.2					
1984 10 07	05 24.29	+36 58.6	2.261	2.769	110.1	19.8	16.9
1984 10 17	05 25.73	+38 15.5					
1984 10 27	05 23.87	+39 31.4	2.048	2.779	128.6	16.2	16.6
1984 11 06	05 18.47	+40 42.4					
1984 11 16	05 09.68	+41 42.6	1.901	2.788	147.7	10.9	16.4
1984 11 26	04 58.11	+42 25.2					
1984 12 06	04 44.99	+42 44.9	1.850	2.795	159.7	7.0	16.2
1984 12 16	04 31.93	+42 40.5					
1984 12 26	04 20.49	+42 15.1	1.909	2.800	149.3	10.3	16.4
1985 01 05	04 11.92	+41 35.4					
1985 01 15	04 06.83	+40 49.3	2.066	2.804	130.3	15.5	16.7
1985 01 25	04 05.35	+40 03.2					
1985 02 04	04 07.30	+39 21.5	2.290	2.807	111.6	19.1	17.0
1985 02 14	04 12.29	+38 46.2					
1985 02 24	04 19.91	+38 17.7	2.548	2.808	94.7	20.6	17.2

1976 GR6 a,e,i = 2.20, 0.09, 6 Elements MPC 9078

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 09 17	05 04.61	+16 12.1	2.012	2.358	97.1	25.0	18.5
1984 09 27	05 12.60	+16 04.0					
1984 10 07	05 18.15	+15 51.3	1.763	2.346	113.4	23.0	18.1
1984 10 17	05 20.89	+15 35.5					
1984 10 27	05 20.45	+15 18.1	1.544	2.332	132.4	18.3	17.7
1984 11 06	05 16.62	+15 01.1					
1984 11 16	05 09.56	+14 46.2	1.386	2.317	154.4	10.6	17.3
1984 11 26	04 59.81	+14 35.5					
1984 12 06	04 48.51	+14 30.8	1.321	2.301	172.1	3.4	16.9
1984 12 16	04 37.14	+14 34.0					
1984 12 26	04 27.17	+14 46.5	1.365	2.284	152.7	11.4	17.2
1985 01 05	04 19.84	+15 08.9					
1985 01 15	04 15.80	+15 40.9	1.501	2.266	130.3	19.3	17.6
1985 01 25	04 15.25	+16 21.1					
1985 02 04	04 18.09	+17 07.6	1.697	2.246	111.0	24.2	18.0
1985 02 14	04 24.01	+17 58.1					
1985 02 24	04 32.65	+18 50.2	1.918	2.227	94.5	26.3	18.3

1934 RP a,e,i = 2.33, 0.21, 2 Elements MPC 9069

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	04 57.35	+22 32.6	1.413	1.847	98.2	32.6	18.2
1984	09 27	05 11.61	+23 02.2					
1984	10 07	05 23.20	+23 26.1	1.235	1.855	111.9	30.0	17.9
1984	10 17	05 31.55	+23 46.4					
1984	10 27	05 36.07	+24 04.6	1.080	1.870	128.7	24.5	17.5
1984	11 06	05 36.32	+24 21.4					
1984	11 16	05 32.23	+24 36.2	0.971	1.892	149.6	15.3	17.1
1984	11 26	05 24.29	+24 47.1					
1984	12 06	05 13.83	+24 51.8	0.936	1.919	173.8	3.2	16.6
1984	12 16	05 02.80	+24 49.8					
1984	12 26	04 53.22	+24 43.1	0.995	1.951	160.8	9.5	17.1
1985	01 05	04 46.70	+24 35.8					
1985	01 15	04 44.04	+24 31.4	1.142	1.988	138.4	19.2	17.6
1985	01 25	04 45.36	+24 31.7					
1985	02 04	04 50.38	+24 36.9	1.352	2.028	119.6	25.0	18.2
1985	02 14	04 58.60	+24 45.5					
1985	02 24	05 09.50	+24 55.5	1.600	2.072	103.7	27.7	18.6

4260 P-L a,e,i = 2.80, 0.13, 4 Elements MPC 9070

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 27.42	+23 52.0	2.134	2.467	97.2	23.7	17.5
1984	10 17	06 35.45	+23 35.8					
1984	10 27	06 40.91	+23 19.3	1.906	2.480	113.9	21.5	17.2
1984	11 06	06 43.46	+23 03.7					
1984	11 16	06 42.89	+22 49.9	1.711	2.496	133.5	16.7	16.8
1984	11 26	06 39.14	+22 37.7					
1984	12 06	06 32.52	+22 26.8	1.582	2.514	156.0	9.2	16.5
1984	12 16	06 23.72	+22 16.1					
1984	12 26	06 13.83	+22 04.9	1.550	2.534	178.5	0.6	16.0
1985	01 05	06 04.19	+21 53.1					
1985	01 15	05 56.04	+21 41.6	1.631	2.555	154.7	9.5	16.6
1985	01 25	05 50.29	+21 31.7					
1985	02 04	05 47.46	+21 24.4	1.808	2.577	132.4	16.4	17.0
1985	02 14	05 47.65	+21 19.8					
1985	02 24	05 50.71	+21 17.4	2.050	2.601	113.0	20.5	17.4
1985	03 06	05 56.36	+21 16.3					
1985	03 16	06 04.22	+21 14.8	2.326	2.626	96.1	22.1	17.7

1973 UU4 a,e,i = 2.35, 0.23, 7 Elements MPC 9077

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 33.37	+14 35.2	1.600	1.962	95.2	30.5	18.7
1984	10 17	06 44.09	+13 38.0					
1984	10 27	06 51.82	+12 39.8	1.436	2.007	110.1	27.7	18.4
1984	11 06	06 56.18	+11 43.9					
1984	11 16	06 56.89	+10 54.4	1.293	2.056	128.1	22.3	18.1
1984	11 26	06 53.82	+10 15.2					
1984	12 06	06 47.24	+09 50.3	1.200	2.106	149.0	14.0	17.8
1984	12 16	06 37.93	+09 42.5					
1984	12 26	06 27.14	+09 52.5	1.190	2.158	166.3	6.2	17.7
1985	01 05	06 16.49	+10 19.2					
1985	01 15	06 07.48	+10 59.0	1.282	2.211	154.5	11.0	18.0
1985	01 25	06 01.17	+11 47.6					
1985	02 04	05 58.15	+12 40.7	1.466	2.264	133.9	18.3	18.5
1985	02 14	05 58.46	+13 34.5					
1985	02 24	06 01.87	+14 26.0	1.714	2.317	115.3	22.7	19.0
1985	03 06	06 08.03	+15 12.9					
1985	03 16	06 16.50	+15 53.7	1.999	2.369	99.1	24.5	19.4

(3109) 1974 DC a,e,i = 2.45, 0.09, 7 Elements MPC 9073

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	07 06.01	+29 17.5	2.474	2.652	89.0	22.1	17.1
1984	10 17	07 15.10	+29 35.0					
1984	10 27	07 22.01	+29 57.6	2.215	2.657	105.3	21.2	16.8
1984	11 06	07 26.35	+30 26.4					
1984	11 16	07 27.77	+31 02.1	1.978	2.660	123.9	18.0	16.5
1984	11 26	07 25.97	+31 43.7					
1984	12 06	07 20.83	+32 28.4	1.794	2.662	145.0	12.3	16.2
1984	12 16	07 12.59	+33 11.5					
1984	12 26	07 01.91	+33 46.9	1.698	2.662	165.7	5.2	15.9
1985	01 05	06 50.00	+34 09.1					
1985	01 15	06 38.37	+34 15.5	1.714	2.662	160.4	7.1	15.9
1985	01 25	06 28.40	+34 06.7					
1985	02 04	06 21.21	+33 46.0	1.838	2.659	138.7	14.2	16.3
1985	02 14	06 17.31	+33 17.9					
1985	02 24	06 16.80	+32 46.0	2.039	2.656	118.3	19.2	16.6
1985	03 06	06 19.50	+32 12.6					
1985	03 16	06 25.02	+31 38.6	2.284	2.650	100.4	21.7	16.9

1979 MP1 a,e,i = 2.44, 0.12, 2 Elements MPC 5846

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 52.00	+19 05.9	2.260	2.576	96.9	22.5	20.8
1984	11 06	07 57.92	+18 44.4					
1984	11 16	08 01.33	+18 29.4	2.024	2.598	114.7	20.2	20.6
1984	11 26	08 01.93	+18 22.6					
1984	12 06	07 59.55	+18 25.1	1.824	2.618	135.3	15.4	20.2
1984	12 16	07 54.22	+18 36.8					
1984	12 26	07 46.26	+18 56.5	1.695	2.636	158.8	7.8	19.9
1985	01 05	07 36.43	+19 21.4					
1985	01 15	07 25.82	+19 48.1	1.672	2.653	175.3	1.7	19.6
1985	01 25	07 15.67	+20 13.6					
1985	02 04	07 07.18	+20 35.9	1.764	2.669	151.0	10.3	20.1
1985	02 14	07 01.17	+20 53.8					
1985	02 24	06 58.05	+21 07.4	1.951	2.683	128.7	16.7	20.5
1985	03 06	06 57.92	+21 16.5					
1985	03 16	07 00.58	+21 21.2	2.199	2.695	109.2	20.4	20.8
1985	03 26	07 05.75	+21 21.2					
1985	04 05	07 13.09	+21 16.2	2.473	2.705	92.3	21.7	21.1

(2963) 1964 VM1 a,e,i = 2.87, 0.07, 3 Elements MPC 8387

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	08 25.55	+21 41.4	2.582	2.763	89.8	21.1	18.3
1984	11 06	08 33.49	+21 25.9					
1984	11 16	08 39.37	+21 17.7	2.327	2.776	106.6	20.0	18.0
1984	11 26	08 42.92	+21 18.3					
1984	12 06	08 43.87	+21 28.9	2.097	2.791	125.8	16.6	17.7
1984	12 16	08 42.11	+21 49.4					
1984	12 26	08 37.63	+22 18.7	1.924	2.805	147.7	10.8	17.4
1985	01 05	08 30.75	+22 53.6					
1985	01 15	08 22.12	+23 29.8	1.844	2.820	171.1	3.1	17.0
1985	01 25	08 12.69	+24 02.7					
1985	02 04	08 03.61	+24 28.4	1.878	2.835	162.8	5.9	17.2
1985	02 14	07 55.91	+24 44.9					
1985	02 24	07 50.39	+24 51.6	2.020	2.850	139.9	12.9	17.6
1985	03 06	07 47.50	+24 49.4					
1985	03 16	07 47.32	+24 39.5	2.243	2.865	119.3	17.6	17.9
1985	03 26	07 49.74	+24 22.9					
1985	04 05	07 54.51	+24 00.3	2.511	2.880	101.3	19.9	18.3

A916 PC a,e,i = 2.31, 0.15, 9 Elements MPC 9076

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	08 59.21	+20 30.8	2.188	2.581	101.9	22.0	17.8
1984	11 26	09 02.97	+20 00.5					
1984	12 06	09 03.95	+19 38.9	1.954	2.600	120.8	19.0	17.5
1984	12 16	09 01.92	+19 26.5					
1984	12 26	08 56.78	+19 22.9	1.766	2.617	142.7	13.2	17.1
1985	01 05	08 48.76	+19 26.3					
1985	01 15	08 38.48	+19 33.5	1.663	2.632	167.3	4.7	16.8
1985	01 25	08 26.95	+19 40.8					
1985	02 04	08 15.49	+19 44.6	1.674	2.644	167.0	4.8	16.8
1985	02 14	08 05.39	+19 43.2					
1985	02 24	07 57.62	+19 35.8	1.797	2.653	142.7	13.1	17.2
1985	03 06	07 52.77	+19 22.9					
1985	03 16	07 50.96	+19 05.1	2.005	2.661	121.2	18.6	17.6
1985	03 26	07 52.06	+18 42.8					
1985	04 05	07 55.80	+18 16.0	2.260	2.665	102.7	21.5	17.9
1985	04 15	08 01.78	+17 44.5					
1985	04 25	08 09.66	+17 08.1	2.531	2.667	86.6	22.1	18.2

1981 EQ28 a,e,i = 2.76, 0.20, 3 Elements MPC 8136

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	11 16	08 48.10	+14 28.9	1.930	2.356	-1.25	+3.5	18.3
1984	11 26	08 53.86	+14 01.3					
1984	12 06	08 56.86	+13 45.6	1.732	2.391	-1.41	+4.2	18.1
1984	12 16	08 56.89	+13 43.9					
1984	12 26	08 53.87	+13 57.2	1.578	2.429	-1.61	+4.7	17.8
1985	01 05	08 48.05	+14 24.9					
1985	01 15	08 40.06	+15 04.2	1.503	2.468	-1.75	+4.8	17.5
1985	01 25	08 30.86	+15 50.4					
1985	02 04	08 21.72	+16 38.0	1.534	2.509	-1.75	+4.3	17.5
1985	02 14	08 13.84	+17 21.8					
1985	02 24	08 08.14	+17 58.4	1.673	2.550	-1.59	+3.5	17.9
1985	03 06	08 05.19	+18 26.0					
1985	03 16	08 05.08	+18 43.8	1.895	2.593	-1.38	+3.0	18.4
1985	03 26	08 07.71	+18 52.0					
1985	04 05	08 12.79	+18 50.8	2.170	2.635	-1.17	+2.7	18.8
1985	04 15	08 19.94	+18 40.6					
1985	04 25	08 28.83	+18 21.8	2.468	2.678	-1.01	+2.6	19.1

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.
1984	11 16	08 54.32	+21 09.1	2.475	2.867	103.2	19.6	19.7
1984	11 26	08 58.27	+20 59.4					
1984	12 06	08 59.78	+20 58.9	2.215	2.863	122.1	16.9	19.4
1984	12 16	08 58.68	+21 08.1					
1984	12 26	08 54.87	+21 26.2	2.008	2.859	143.6	11.8	19.1
1985	01 05	08 48.53	+21 51.0					
1985	01 15	08 40.16	+22 18.9	1.888	2.855	167.1	4.4	18.7
1985	01 25	08 30.55	+22 45.4					
1985	02 04	08 20.81	+23 06.5	1.880	2.850	167.0	4.5	18.7
1985	02 14	08 12.04	+23 19.4					
1985	02 24	08 05.15	+23 23.1	1.986	2.844	143.6	11.9	19.0
1985	03 06	08 00.77	+23 17.9					
1985	03 16	07 59.12	+23 04.8	2.178	2.837	122.3	17.2	19.4
1985	03 26	08 00.18	+22 44.9					
1985	04 05	08 03.75	+22 18.9	2.421	2.830	103.7	20.1	19.6
1985	04 15	08 09.52	+21 47.1					
1985	04 25	08 17.19	+21 09.7	2.682	2.823	87.5	20.9	19.9

(2982) 1981 JA3 a,e,i = 3.00, 0.07, 10 Elements MPC 8398

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	08 56.82	+28 43.0	2.404	2.820	104.5	19.8	17.6
1984	11 26	09 02.03	+29 12.6					
1984	12 06	09 04.69	+29 53.5	2.169	2.826	122.8	17.0	17.3
1984	12 16	09 04.57	+30 44.6					
1984	12 26	09 01.52	+31 43.2	1.987	2.834	142.8	12.1	17.0
1985	01 05	08 55.67	+32 44.1					
1985	01 15	08 47.53	+33 40.5	1.892	2.842	161.4	6.3	16.8
1985	01 25	08 37.94	+34 25.3					
1985	02 04	08 28.11	+34 53.1	1.906	2.851	159.5	7.0	16.8
1985	02 14	08 19.26	+35 01.4					
1985	02 24	08 12.40	+34 51.3	2.027	2.860	140.4	12.7	17.1
1985	03 06	08 08.20	+34 25.5					
1985	03 16	08 06.88	+33 47.7	2.230	2.871	120.9	17.3	17.4
1985	03 26	08 08.38	+33 00.9					
1985	04 05	08 12.44	+32 07.6	2.483	2.881	103.2	19.8	17.7
1985	04 15	08 18.73	+31 09.2					
1985	04 25	08 26.88	+30 06.4	2.756	2.893	87.5	20.3	18.0

1980 RA a,e,i = 2.37, 0.36, 21 Elements MPC 6049

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 25.71	+49 42.5	1.003	1.567	103.8	37.8	16.9
1984	11 26	09 41.18	+49 28.3					
1984	12 06	09 49.72	+49 20.9	0.918	1.617	116.3	33.1	16.6
1984	12 16	09 50.64	+49 17.7					
1984	12 26	09 43.44	+49 09.5	0.852	1.680	132.3	25.7	16.4
1985	01 05	09 28.63	+48 39.0					
1985	01 15	09 08.46	+47 26.9	0.834	1.751	148.9	16.9	16.2
1985	01 25	08 46.71	+45 22.2					
1985	02 04	08 27.50	+42 30.3	0.898	1.830	152.5	14.4	16.4
1985	02 14	08 13.44	+39 10.7					
1985	02 24	08 05.26	+35 44.7	1.055	1.914	138.7	20.0	17.0
1985	03 06	08 02.50	+32 27.2					
1985	03 16	08 04.16	+29 25.4	1.288	1.999	121.7	25.0	17.6
1985	03 26	08 09.25	+26 40.4					
1985	04 05	08 16.94	+24 10.3	1.572	2.086	106.3	27.4	18.2
1985	04 15	08 26.55	+21 52.3					
1985	04 25	08 37.57	+19 43.3	1.883	2.172	92.4	27.6	18.7

1931 CE a,e,i = 2.73, 0.25, 10 Elements MPC 7598

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 01.75	+28 14.2	1.706	2.160	103.4	26.4	17.4
1984	11 26	09 09.44	+27 56.7					
1984	12 06	09 13.76	+27 49.0	1.528	2.199	120.5	22.7	17.2
1984	12 16	09 14.40	+27 50.8					
1984	12 26	09 11.16	+27 59.9	1.392	2.241	140.7	16.1	16.8
1985	01 05	09 04.26	+28 11.7					
1985	01 15	08 54.44	+28 19.4	1.329	2.287	162.7	7.3	16.6
1985	01 25	08 42.95	+28 16.8					
1985	02 04	08 31.50	+27 59.5	1.368	2.336	165.6	6.0	16.6
1985	02 14	08 21.65	+27 27.2					
1985	02 24	08 14.52	+26 42.5	1.510	2.386	144.5	13.9	17.1
1985	03 06	08 10.71	+25 49.0					
1985	03 16	08 10.20	+24 50.1	1.735	2.438	124.3	19.7	17.6
1985	03 26	08 12.73	+23 47.8					
1985	04 05	08 17.89	+22 42.9	2.011	2.492	106.8	22.6	18.0
1985	04 15	08 25.20	+21 35.8					
1985	04 25	08 34.24	+20 26.3	2.312	2.545	91.5	23.3	18.4

1978 TT2 a,e,i = 2.88, 0.02, 3 Elements MPC 7657

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 00.44	+19 56.2	2.500	2.866	101.5	19.8	18.2
1984	11 26	09 05.20	+19 49.6					
1984	12 06	09 07.65	+19 53.2	2.239	2.862	120.1	17.3	17.9
1984	12 16	09 07.60	+20 07.6					
1984	12 26	09 04.91	+20 32.7	2.025	2.858	141.1	12.5	17.6
1985	01 05	08 59.70	+21 06.5					
1985	01 15	08 52.36	+21 45.4	1.895	2.855	164.3	5.4	17.3
1985	01 25	08 43.58	+22 24.8					
1985	02 04	08 34.38	+22 59.7	1.876	2.851	169.7	3.6	17.1
1985	02 14	08 25.83	+23 26.4					
1985	02 24	08 18.90	+23 42.7	1.969	2.847	146.5	11.1	17.5
1985	03 06	08 14.29	+23 48.2					
1985	03 16	08 12.30	+23 43.8	2.153	2.844	125.1	16.6	17.8
1985	03 26	08 12.99	+23 30.6					
1985	04 05	08 16.21	+23 09.4	2.392	2.841	106.3	19.8	18.1
1985	04 15	08 21.66	+22 41.0					
1985	04 25	08 29.05	+22 06.0	2.654	2.837	89.9	20.8	18.4

(3110) 1975 SC a,e,i = 2.56, 0.12, 2 Elements MPC 9074

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 00.95	+19 26.9	1.917	2.322	101.2	24.7	18.3
1984	11 26	09 07.89	+19 02.4					
1984	12 06	09 12.06	+18 48.9	1.703	2.343	118.8	21.6	18.0
1984	12 16	09 13.18	+18 47.8					
1984	12 26	09 11.05	+18 59.6	1.530	2.364	139.4	15.7	17.7
1985	01 05	09 05.75	+19 22.7					
1985	01 15	08 57.75	+19 53.4	1.430	2.388	162.9	7.0	17.3
1985	01 25	08 47.97	+20 26.3					
1985	02 04	08 37.73	+20 55.5	1.433	2.412	171.5	3.5	17.2
1985	02 14	08 28.45	+21 16.5					
1985	02 24	08 21.28	+21 27.3	1.543	2.437	147.7	12.5	17.7
1985	03 06	08 16.98	+21 27.3					
1985	03 16	08 15.78	+21 17.4	1.738	2.463	126.5	18.9	18.1
1985	03 26	08 17.61	+20 58.8					
1985	04 05	08 22.16	+20 32.2	1.987	2.490	108.3	22.4	18.5
1985	04 15	08 29.03	+19 58.1					
1985	04 25	08 37.84	+19 16.9	2.262	2.517	92.6	23.5	18.8

1983 RO2 a,e,i = 2.24, 0.15, 4 Elements MPC 8382

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 07.40	+13 56.7	2.174	2.513	98.2	22.9	19.2
1984	11 26	09 12.79	+13 33.9					
1984	12 06	09 15.67	+13 23.0	1.933	2.529	116.3	20.4	18.9
1984	12 16	09 15.79	+13 26.1					
1984	12 26	09 12.93	+13 44.6	1.729	2.542	137.4	15.2	18.6
1985	01 05	09 07.15	+14 18.4					
1985	01 15	08 58.83	+15 05.1	1.601	2.553	161.4	7.1	18.2
1985	01 25	08 48.71	+16 00.3					
1985	02 04	08 37.99	+16 57.7	1.580	2.561	172.7	2.8	18.0
1985	02 14	08 27.96	+17 51.5					
1985	02 24	08 19.76	+18 37.2	1.672	2.566	148.0	11.8	18.4
1985	03 06	08 14.21	+19 12.2					
1985	03 16	08 11.67	+19 36.0	1.855	2.569	125.9	18.3	18.8
1985	03 26	08 12.14	+19 48.7					
1985	04 05	08 15.42	+19 51.0	2.092	2.569	106.9	21.9	19.2
1985	04 15	08 21.15	+19 43.5					
1985	04 25	08 28.99	+19 26.7	2.351	2.566	90.6	23.1	19.4

1982 HE1 a,e,i = 2.33, 0.18, 9 Elements MPC 7017

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 11 16	09 04.36	+26 16.5	2.141	2.543	102.3	22.3	18.7
1984 11 26	09 11.10	+26 37.2					
1984 12 06	09 15.32	+27 11.5	1.867	2.510	120.0	19.9	18.3
1984 12 16	09 16.63	+28 00.1					
1984 12 26	09 14.65	+29 01.9	1.639	2.475	140.0	14.8	17.9
1985 01 05	09 09.23	+30 12.8					
1985 01 15	09 00.62	+31 25.3	1.489	2.438	160.3	7.8	17.5
1985 01 25	08 49.56	+32 29.8					
1985 02 04	08 37.43	+33 16.8	1.443	2.399	161.8	7.4	17.4
1985 02 14	08 25.89	+33 40.4					
1985 02 24	08 16.50	+33 39.6	1.502	2.360	141.7	15.1	17.6
1985 03 06	08 10.38	+33 17.3					
1985 03 16	08 07.97	+32 38.5	1.639	2.320	121.5	21.5	17.9
1985 03 26	08 09.26	+31 47.2					
1985 04 05	08 13.94	+30 46.5	1.821	2.279	103.9	25.2	18.2
1985 04 15	08 21.51	+29 38.2					
1985 04 25	08 31.51	+28 23.0	2.017	2.237	88.9	26.7	18.4

1977 UP a,e,i = 2.18, 0.15, 3 Elements MPC 5520

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 11 16	09 14.22	+19 57.6	1.872	2.241	98.4	25.9	19.7
1984 11 26	09 21.30	+19 36.8					
1984 12 06	09 25.51	+19 28.5	1.664	2.274	115.9	22.9	19.4
1984 12 16	09 26.52	+19 34.1					
1984 12 26	09 24.05	+19 54.1	1.490	2.305	136.6	17.0	19.1
1985 01 05	09 18.09	+20 26.4					
1985 01 15	09 09.04	+21 06.5	1.385	2.335	160.4	8.1	18.7
1985 01 25	08 57.81	+21 47.8					
1985 02 04	08 45.83	+22 23.0	1.382	2.363	172.0	3.3	18.6
1985 02 14	08 34.69	+22 47.0					
1985 02 24	08 25.73	+22 57.6	1.489	2.388	148.2	12.6	19.0
1985 03 06	08 19.86	+22 55.0					
1985 03 16	08 17.34	+22 41.2	1.684	2.412	126.5	19.4	19.5
1985 03 26	08 18.11	+22 17.9					
1985 04 05	08 21.83	+21 46.6	1.930	2.432	107.9	23.0	19.9
1985 04 15	08 28.06	+21 08.1					
1985 04 25	08 36.38	+20 22.8	2.200	2.451	92.0	24.2	20.2

1981 YC a,e,i = 1.86, 0.08, 22 Elements MPC 8891

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984 11 16	09 10.83	-03 21.5	1.722	2.015	-1.26	+8.7	17.9
1984 11 26	09 18.73	-06 29.8					
1984 12 06	09 24.08	-09 41.2	1.509	2.009	-1.51	+9.1	17.6
1984 12 16	09 26.48	-12 51.6					
1984 12 26	09 25.49	-15 54.2	1.324	2.001	-1.86	+10.0	17.2
1985 01 05	09 20.83	-18 39.5					
1985 01 15	09 12.57	-20 55.8	1.187	1.990	-2.22	+12.1	16.9
1985 01 25	09 01.26	-22 30.2					
1985 02 04	08 48.23	-23 12.5	1.118	1.977	-2.38	+15.3	16.7
1985 02 14	08 35.28	-22 59.8					
1985 02 24	08 24.28	-21 57.3	1.124	1.963	-2.19	+17.4	16.7
1985 03 06	08 16.69	-20 17.9					
1985 03 16	08 13.20	-18 17.5	1.197	1.946	-1.85	+16.6	16.9
1985 03 26	08 13.94	-16 10.3					
1985 04 05	08 18.63	-14 07.6	1.317	1.928	-1.56	+14.1	17.2
1985 04 15	08 26.74	-12 17.0					
1985 04 25	08 37.79	-10 42.5	1.464	1.909	-1.36	+11.3	17.5

(3054) 1977 RE7 a,e,i = 3.11, 0.20, 2 Elements MPC 8788

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 19.57	+14 39.5	3.351	3.585	95.6	15.9	18.3
1984	11 26	09 22.60	+14 25.8					
1984	12 06	09 23.79	+14 20.8	3.080	3.605	114.8	14.4	18.1
1984	12 16	09 23.04	+14 25.2					
1984	12 26	09 20.30	+14 39.4	2.852	3.624	136.0	10.9	17.8
1985	01 05	09 15.68	+15 02.5					
1985	01 15	09 09.44	+15 33.0	2.705	3.641	159.2	5.5	17.6
1985	01 25	09 02.05	+16 08.2					
1985	02 04	08 54.15	+16 44.9	2.673	3.657	176.6	0.9	17.2
1985	02 14	08 46.44	+17 20.0					
1985	02 24	08 39.60	+17 50.7	2.763	3.671	152.8	7.1	17.7
1985	03 06	08 34.20	+18 15.2					
1985	03 16	08 30.59	+18 32.7	2.959	3.683	130.5	11.8	18.0
1985	03 26	08 28.93	+18 42.8					
1985	04 05	08 29.25	+18 45.7	3.225	3.694	110.4	14.7	18.2
1985	04 15	08 31.42	+18 41.7					
1985	04 25	08 35.29	+18 31.1	3.525	3.703	92.2	15.8	18.4

6032 P-L a,e,i = 2.45, 0.16, 2 Elements MPC 8395

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 23.82	+16 10.9	2.400	2.676	95.1	21.6	19.5
1984	11 26	09 29.30	+15 42.0					
1984	12 06	09 32.44	+15 23.4	2.158	2.701	113.1	19.6	19.3
1984	12 16	09 33.00	+15 16.6					
1984	12 26	09 30.80	+15 22.3	1.949	2.724	133.8	15.1	19.0
1985	01 05	09 25.84	+15 40.2					
1985	01 15	09 18.40	+16 08.1	1.811	2.745	157.3	8.0	18.7
1985	01 25	09 09.10	+16 42.3					
1985	02 04	08 58.90	+17 18.1	1.779	2.764	177.6	0.9	18.2
1985	02 14	08 48.95	+17 50.7					
1985	02 24	08 40.31	+18 16.5	1.864	2.781	152.8	9.3	18.8
1985	03 06	08 33.85	+18 33.5					
1985	03 16	08 30.00	+18 41.1	2.047	2.796	130.4	15.7	19.2
1985	03 26	08 28.89	+18 39.6					
1985	04 05	08 30.42	+18 29.5	2.295	2.809	110.7	19.5	19.5
1985	04 15	08 34.30	+18 11.4					
1985	04 25	08 40.24	+17 45.8	2.572	2.819	93.5	20.9	19.8

1982 UM a,e,i = 3.94, 0.18, 4 Elements MPC 8539

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 22.60	+20 15.2	4.112	4.338	96.6	13.1	18.6
1984	11 26	09 24.96	+20 16.5					
1984	12 06	09 25.72	+20 25.3	3.837	4.361	116.1	11.7	18.4
1984	12 16	09 24.84	+20 41.5					
1984	12 26	09 22.29	+21 04.2	3.609	4.383	137.3	8.8	18.2
1985	01 05	09 18.20	+21 32.2					
1985	01 15	09 12.79	+22 03.0	3.469	4.404	159.6	4.5	18.0
1985	01 25	09 06.45	+22 34.3					
1985	02 04	08 59.67	+23 03.1	3.444	4.424	173.1	1.5	17.7
1985	02 14	08 52.99	+23 27.1					
1985	02 24	08 46.96	+23 44.7	3.543	4.444	152.4	5.9	18.1
1985	03 06	08 42.02	+23 55.0					
1985	03 16	08 38.49	+23 58.0	3.749	4.462	130.7	9.7	18.3
1985	03 26	08 36.55	+23 54.1					
1985	04 05	08 36.25	+23 43.8	4.029	4.480	110.6	12.1	18.6
1985	04 15	08 37.52	+23 27.9					
1985	04 25	08 40.27	+23 07.1	4.345	4.497	92.2	12.9	18.8

1981 EM4 a,e,i = 2.66, 0.11, 13 Elements MPC 8277

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 11 16	09 21.26	+24 53.8	2.014	2.368	98.3	24.4	15.5
1984 11 26	09 29.30	+24 13.3					
1984 12 06	09 34.67	+23 40.3	1.772	2.363	115.0	22.2	15.1
1984 12 16	09 37.04	+23 15.9					
1984 12 26	09 36.09	+22 59.9	1.565	2.361	134.5	17.3	14.7
1985 01 05	09 31.70	+22 50.4					
1985 01 15	09 24.11	+22 43.9	1.424	2.361	157.0	9.4	14.3
1985 01 25	09 14.03	+22 35.7					
1985 02 04	09 02.69	+22 20.8	1.381	2.364	173.9	2.5	14.0
1985 02 14	08 51.63	+21 56.1					
1985 02 24	08 42.26	+21 20.9	1.447	2.368	152.3	11.2	14.4
1985 03 06	08 35.66	+20 36.5					
1985 03 16	08 32.30	+19 45.1	1.605	2.376	130.6	18.5	14.8
1985 03 26	08 32.21	+18 48.6					
1985 04 05	08 35.17	+17 47.8	1.823	2.385	112.0	22.9	15.2
1985 04 15	08 40.74	+16 43.2					
1985 04 25	08 48.53	+15 34.6	2.072	2.397	96.0	24.7	15.5

1981 EX16 a,e,i = 2.79, 0.16, 17 Elements MPC 8677

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 11 16	09 32.80	+33 02.2	2.269	2.601	98.2	22.1	17.9
1984 11 26	09 39.68	+33 08.8					
1984 12 06	09 43.73	+33 26.5	2.058	2.633	115.2	19.8	17.6
1984 12 16	09 44.65	+33 54.5					
1984 12 26	09 42.17	+34 30.2	1.885	2.666	134.3	15.3	17.4
1985 01 05	09 36.26	+35 08.0					
1985 01 15	09 27.29	+35 40.6	1.783	2.699	153.4	9.4	17.1
1985 01 25	09 16.05	+36 00.0					
1985 02 04	09 03.86	+35 59.5	1.783	2.732	160.4	6.9	17.1
1985 02 14	08 52.18	+35 36.5					
1985 02 24	08 42.33	+34 52.3	1.893	2.765	145.4	11.7	17.4
1985 03 06	08 35.20	+33 51.2					
1985 03 16	08 31.16	+32 38.4	2.095	2.798	126.0	16.7	17.7
1985 03 26	08 30.18	+31 18.4					
1985 04 05	08 32.01	+29 54.3	2.358	2.830	107.9	19.7	18.1
1985 04 15	08 36.23	+28 28.0					
1985 04 25	08 42.47	+27 00.4	2.651	2.862	91.6	20.6	18.4

1982 JA a,e,i = 2.42, 0.12, 9 Elements MPC 8277

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 11 16	09 22.65	+22 09.4	2.385	2.693	97.2	21.4	18.5
1984 11 26	09 29.29	+22 23.9					
1984 12 06	09 33.67	+22 52.2	2.119	2.687	115.0	19.4	18.2
1984 12 16	09 35.49	+23 35.4					
1984 12 26	09 34.46	+24 33.4	1.891	2.680	135.1	15.0	17.9
1985 01 05	09 30.44	+25 43.7					
1985 01 15	09 23.59	+27 01.0	1.738	2.670	156.8	8.3	17.5
1985 01 25	09 14.41	+28 17.7					
1985 02 04	09 03.88	+29 25.1	1.689	2.659	167.0	4.8	17.3
1985 02 14	08 53.29	+30 16.0					
1985 02 24	08 43.94	+30 46.6	1.753	2.646	148.2	11.4	17.6
1985 03 06	08 36.91	+30 56.7					
1985 03 16	08 32.82	+30 48.8	1.908	2.631	127.1	17.6	17.9
1985 03 26	08 31.86	+30 26.0					
1985 04 05	08 33.92	+29 51.4	2.121	2.614	108.3	21.3	18.2
1985 04 15	08 38.68	+29 07.3					
1985 04 25	08 45.77	+28 15.2	2.358	2.596	92.0	22.8	18.5

1981 ET38 a,e,i = 2.78, 0.16, 10 Elements MPC 8908

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 11 16	09 24.87	+04 50.4	2.653	2.851	91.3	20.3	18.9
1984 11 26	09 30.07	+03 57.6					
1984 12 06	09 33.22	+03 13.9	2.412	2.882	108.7	18.9	18.6
1984 12 16	09 34.14	+02 41.5					
1984 12 26	09 32.70	+02 23.2	2.199	2.913	128.3	15.4	18.4
1985 01 05	09 28.94	+02 20.9					
1985 01 15	09 23.09	+02 35.9	2.050	2.942	149.7	9.7	18.1
1985 01 25	09 15.63	+03 07.7					
1985 02 04	09 07.30	+03 54.2	2.000	2.970	167.5	4.1	17.9
1985 02 14	08 59.00	+04 50.9					
1985 02 24	08 51.61	+05 52.8	2.065	2.997	156.1	7.7	18.1
1985 03 06	08 45.86	+06 54.5					
1985 03 16	08 42.21	+07 51.4	2.235	3.022	135.1	13.4	18.5
1985 03 26	08 40.88	+08 40.6					
1985 04 05	08 41.84	+09 20.1	2.480	3.046	115.4	17.3	18.8
1985 04 15	08 44.95	+09 49.1					
1985 04 25	08 49.96	+10 07.2	2.767	3.069	97.8	19.0	19.1

1983 XS a,e,i = 3.10, 0.15, 5 Elements MPC 8540

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 11 16	09 25.39	+15 15.7	2.636	2.886	94.4	20.0	17.4
1984 11 26	09 31.62	+14 32.4					
1984 12 06	09 35.88	+13 56.4	2.341	2.858	111.9	18.7	17.1
1984 12 16	09 37.93	+13 29.2					
1984 12 26	09 37.57	+13 12.2	2.081	2.831	131.6	15.1	16.7
1985 01 05	09 34.70	+13 06.1					
1985 01 15	09 29.47	+13 10.2	1.888	2.805	153.8	8.9	16.3
1985 01 25	09 22.26	+13 23.0					
1985 02 04	09 13.79	+13 41.6	1.795	2.780	177.0	1.1	15.8
1985 02 14	09 05.05	+14 02.0					
1985 02 24	08 57.05	+14 20.7	1.815	2.756	157.6	7.9	16.2
1985 03 06	08 50.74	+14 34.5					
1985 03 16	08 46.72	+14 41.5	1.937	2.734	135.2	14.9	16.5
1985 03 26	08 45.31	+14 40.7					
1985 04 05	08 46.54	+14 31.5	2.130	2.714	115.4	19.5	16.8
1985 04 15	08 50.23	+14 13.9					
1985 04 25	08 56.13	+13 47.8	2.360	2.695	98.3	21.7	17.0

1981 EJ10 a,e,i = 2.73, 0.18, 4 Elements MPC 7615

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 11 16	09 37.41	+09 49.1	2.524	2.709	89.9	21.4	19.1
1984 11 26	09 43.64	+08 56.2					
1984 12 06	09 47.75	+08 12.4	2.289	2.746	107.2	20.0	18.9
1984 12 16	09 49.53	+07 39.5					
1984 12 26	09 48.82	+07 19.6	2.079	2.782	126.8	16.4	18.6
1985 01 05	09 45.55	+07 14.1					
1985 01 15	09 39.93	+07 23.3	1.929	2.817	148.9	10.4	18.3
1985 01 25	09 32.36	+07 46.2					
1985 02 04	09 23.60	+08 20.0	1.874	2.852	171.1	3.1	18.0
1985 02 14	09 14.59	+09 00.5					
1985 02 24	09 06.32	+09 43.0	1.934	2.885	160.2	6.7	18.3
1985 03 06	08 59.65	+10 22.9					
1985 03 16	08 55.13	+10 56.8	2.102	2.917	137.9	13.2	18.6
1985 03 26	08 53.02	+11 22.6					
1985 04 05	08 53.35	+11 39.2	2.347	2.948	117.7	17.5	19.0
1985 04 15	08 55.93	+11 46.1					
1985 04 25	09 00.54	+11 43.6	2.635	2.977	99.9	19.4	19.3

1978 VR9 a,e,i = 3.08, 0.16, 2 Elements MPC 8400

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 33.85	+15 57.3	2.565	2.793	92.7	20.7	18.3
1984	11 26	09 40.49	+15 33.8					
1984	12 06	09 45.04	+15 20.8	2.326	2.822	110.2	19.1	18.0
1984	12 16	09 47.28	+15 19.8					
1984	12 26	09 47.05	+15 31.7	2.117	2.852	130.1	15.3	17.8
1985	01 05	09 44.29	+15 56.1					
1985	01 15	09 39.19	+16 31.0	1.973	2.882	152.6	9.0	17.5
1985	01 25	09 32.16	+17 13.1					
1985	02 04	09 23.96	+17 57.3	1.929	2.913	176.0	1.4	17.1
1985	02 14	09 15.52	+18 38.6					
1985	02 24	09 07.80	+19 12.7	2.001	2.945	158.7	7.0	17.5
1985	03 06	09 01.65	+19 36.6					
1985	03 16	08 57.60	+19 49.5	2.177	2.977	136.3	13.4	17.9
1985	03 26	08 55.93	+19 51.5					
1985	04 05	08 56.64	+19 43.1	2.428	3.008	116.3	17.3	18.2
1985	04 15	08 59.57	+19 25.5					
1985	04 25	09 04.47	+18 59.5	2.720	3.040	98.7	19.1	18.5

1975 TZ2 a,e,i = 2.55, 0.20, 7 Elements MPC 8907

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 39.96	+08 40.4	2.530	2.700	89.0	21.5	19.2
1984	11 26	09 46.36	+08 04.0					
1984	12 06	09 50.69	+07 38.4	2.294	2.738	106.3	20.2	19.0
1984	12 16	09 52.73	+07 25.8					
1984	12 26	09 52.28	+07 28.4	2.079	2.775	126.1	16.6	18.7
1985	01 05	09 49.27	+07 47.4					
1985	01 15	09 43.85	+08 22.9	1.923	2.810	148.6	10.5	18.4
1985	01 25	09 36.41	+09 12.9					
1985	02 04	09 27.66	+10 13.6	1.863	2.843	172.2	2.7	18.1
1985	02 14	09 18.56	+11 19.2					
1985	02 24	09 10.09	+12 23.8	1.919	2.873	161.0	6.4	18.3
1985	03 06	09 03.16	+13 22.2					
1985	03 16	08 58.37	+14 10.7	2.085	2.902	138.0	13.3	18.7
1985	03 26	08 56.01	+14 47.8					
1985	04 05	08 56.13	+15 12.7	2.329	2.928	117.5	17.6	19.1
1985	04 15	08 58.57	+15 25.8					
1985	04 25	09 03.08	+15 27.7	2.616	2.952	99.4	19.6	19.4

(2988) 1943 EM a,e,i = 2.61, 0.13, 15 Elements MPC 8463

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 31.30	+19 42.6	2.439	2.703	94.5	21.4	17.6
1984	11 26	09 39.29	+20 01.1					
1984	12 06	09 45.35	+20 34.6	2.152	2.678	111.7	20.0	17.3
1984	12 16	09 49.18	+21 25.3					
1984	12 26	09 50.44	+22 34.1	1.899	2.652	131.2	16.2	16.9
1985	01 05	09 48.91	+24 00.0					
1985	01 15	09 44.53	+25 39.2	1.715	2.626	152.3	10.0	16.5
1985	01 25	09 37.55	+27 24.4					
1985	02 04	09 28.66	+29 05.8	1.630	2.599	166.5	5.1	16.2
1985	02 14	09 18.94	+30 33.3					
1985	02 24	09 09.68	+31 39.6	1.657	2.572	151.7	10.5	16.4
1985	03 06	09 02.16	+32 21.0					
1985	03 16	08 57.26	+32 38.2	1.780	2.545	130.9	17.2	16.7
1985	03 26	08 55.44	+32 34.2					
1985	04 05	08 56.77	+32 12.4	1.965	2.518	112.1	21.6	17.0
1985	04 15	09 01.01	+31 36.2					
1985	04 25	09 07.85	+30 47.9	2.180	2.492	95.8	23.7	17.2

1983 XD a,e,i = 3.10, 0.14, 5 Elements MPC 8465

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 46.40	+08 36.0	3.251	3.356	87.4	17.1	18.6
1984	11 26	09 51.12	+07 51.8					
1984	12 06	09 54.10	+07 15.2	2.979	3.376	105.3	16.3	18.4
1984	12 16	09 55.21	+06 47.6					
1984	12 26	09 54.31	+06 30.6	2.732	3.396	125.2	13.7	18.2
1985	01 05	09 51.38	+06 25.2					
1985	01 15	09 46.57	+06 31.5	2.547	3.415	147.1	9.0	17.9
1985	01 25	09 40.17	+06 49.1					
1985	02 04	09 32.71	+07 16.0	2.460	3.433	169.1	3.1	17.6
1985	02 14	09 24.87	+07 49.4					
1985	02 24	09 17.36	+08 25.7	2.491	3.449	162.8	4.9	17.7
1985	03 06	09 10.90	+09 01.5					
1985	03 16	09 05.98	+09 33.6	2.637	3.464	140.7	10.5	18.0
1985	03 26	09 02.95	+09 59.9					
1985	04 05	09 01.92	+10 18.8	2.868	3.478	120.0	14.4	18.3
1985	04 15	09 02.86	+10 29.8					
1985	04 25	09 05.64	+10 32.5	3.150	3.491	101.4	16.4	18.6

1978 TR2 a,e,i = 2.85, 0.09, 1 Elements MPC 8391

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 46.16	+13 08.2	2.815	2.967	89.0	19.5	19.1
1984	11 26	09 52.33	+12 32.9					
1984	12 06	09 56.60	+12 06.7	2.550	2.983	106.5	18.5	18.8
1984	12 16	09 58.77	+11 51.3					
1984	12 26	09 58.65	+11 47.9	2.310	2.999	126.3	15.3	18.6
1985	01 05	09 56.16	+11 57.1					
1985	01 15	09 51.40	+12 18.2	2.130	3.013	148.5	9.8	18.3
1985	01 25	09 44.67	+12 49.2					
1985	02 04	09 36.57	+13 26.8	2.047	3.027	172.6	2.4	17.9
1985	02 14	09 27.93	+14 06.4					
1985	02 24	09 19.65	+14 43.6	2.080	3.039	162.9	5.5	18.1
1985	03 06	09 12.62	+15 14.8					
1985	03 16	09 07.45	+15 37.5	2.223	3.051	139.8	12.2	18.4
1985	03 26	09 04.51	+15 50.6					
1985	04 05	09 03.93	+15 53.8	2.449	3.062	119.1	16.6	18.8
1985	04 15	09 05.60	+15 47.4					
1985	04 25	09 09.33	+15 32.0	2.720	3.072	100.9	18.8	19.0

1981 FB a,e,i = 2.62, 0.15, 13 Elements MPC 8271

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	11 16	09 27.22	+00 08.7	2.034	2.249	-1.27	+2.7	17.9
1984	11 26	09 37.35	-01 24.3					
1984	12 06	09 45.53	-02 50.2	1.798	2.243	-1.45	+2.9	17.6
1984	12 16	09 51.47	-04 05.2					
1984	12 26	09 54.88	-05 04.9	1.582	2.239	-1.69	+3.4	17.3
1985	01 05	09 55.51	-05 43.9					
1985	01 15	09 53.33	-05 57.0	1.406	2.239	-1.96	+4.3	16.9
1985	01 25	09 48.53	-05 39.8					
1985	02 04	09 41.74	-04 50.5	1.301	2.242	-2.14	+5.4	16.5
1985	02 14	09 33.96	-03 31.7					
1985	02 24	09 26.43	-01 50.5	1.290	2.249	-2.13	+5.9	16.5
1985	03 06	09 20.37	+00 01.9					
1985	03 16	09 16.68	+01 54.2	1.378	2.259	-1.93	+5.3	16.8
1985	03 26	09 15.85	+03 37.0					
1985	04 05	09 18.00	+05 03.9	1.546	2.273	-1.67	+4.2	17.2
1985	04 15	09 22.91	+06 11.9					
1985	04 25	09 30.29	+07 00.0	1.765	2.289	-1.44	+3.4	17.6

1981 EW21 a,e,i = 2.63, 0.13, 1 Elements MPC 7934

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	11 16	09 42.36	+12 33.0	2.435	2.623	-0.94	+4.6	19.0
1984	11 26	09 50.68	+11 45.4					
1984	12 06	09 57.16	+11 06.0	2.146	2.597	-1.08	+5.5	18.7
1984	12 16	10 01.52	+10 37.1					
1984	12 26	10 03.45	+10 21.1	1.880	2.570	-1.25	+6.5	18.3
1985	01 05	10 02.73	+10 19.6					
1985	01 15	09 59.30	+10 33.4	1.667	2.543	-1.44	+7.5	17.9
1985	01 25	09 53.28	+11 01.7					
1985	02 04	09 45.24	+11 41.6	1.540	2.517	-1.59	+7.8	17.5
1985	02 14	09 36.10	+12 28.0					
1985	02 24	09 26.99	+13 14.7	1.522	2.491	-1.59	+7.4	17.5
1985	03 06	09 19.15	+13 56.0					
1985	03 16	09 13.50	+14 27.5	1.608	2.466	-1.46	+6.4	17.8
1985	03 26	09 10.62	+14 46.9					
1985	04 05	09 10.71	+14 53.3	1.771	2.441	-1.28	+5.6	18.2
1985	04 15	09 13.64	+14 46.9					
1985	04 25	09 19.16	+14 28.1	1.978	2.418	-1.13	+5.1	18.4

1982 HS a,e,i = 2.35, 0.31, 25 Elements MPC 8538

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	10 03.31	+40 25.0	2.697	2.948	94.8	19.5	19.5
1984	11 26	10 12.50	+41 26.5					
1984	12 06	10 19.59	+42 44.5	2.424	2.915	110.2	18.5	19.2
1984	12 16	10 24.12	+44 18.5					
1984	12 26	10 25.56	+46 06.6	2.190	2.877	125.7	16.1	18.9
1985	01 05	10 23.34	+48 03.4					
1985	01 15	10 17.10	+50 00.3	2.023	2.836	138.5	13.3	18.6
1985	01 25	10 06.76	+51 45.5					
1985	02 04	09 52.98	+53 05.8	1.945	2.791	142.3	12.5	18.5
1985	02 14	09 37.22	+53 50.6					
1985	02 24	09 21.54	+53 54.3	1.961	2.742	133.9	15.1	18.5
1985	03 06	09 08.05	+53 18.5					
1985	03 16	08 58.20	+52 10.0	2.057	2.690	119.5	18.8	18.6
1985	03 26	08 52.61	+50 37.1					
1985	04 05	08 51.22	+48 47.7	2.204	2.634	104.2	21.6	18.8
1985	04 15	08 53.54	+46 48.0					
1985	04 25	08 59.01	+44 41.5	2.375	2.575	89.7	23.0	19.0

1981 EE27 a,e,i = 2.62, 0.13, 13 Elements MPC 8135

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	11 16	09 31.09	+01 23.3	2.117	2.317	-1.21	+2.0	18.0
1984	11 26	09 41.08	+00 07.0					
1984	12 06	09 49.23	-01 01.2	1.867	2.303	-1.39	+2.2	17.7
1984	12 16	09 55.24	-01 57.6					
1984	12 26	09 58.81	-02 38.0	1.634	2.292	-1.62	+2.7	17.4
1985	01 05	09 59.69	-02 57.3					
1985	01 15	09 57.82	-02 51.3	1.444	2.283	-1.88	+3.5	17.0
1985	01 25	09 53.32	-02 16.4					
1985	02 04	09 46.75	-01 11.9	1.326	2.278	-2.07	+4.4	16.6
1985	02 14	09 39.06	+00 18.3					
1985	02 24	09 31.42	+02 06.4	1.306	2.275	-2.08	+4.6	16.5
1985	03 06	09 25.08	+04 01.3					
1985	03 16	09 20.98	+05 51.9	1.389	2.275	-1.90	+3.9	16.8
1985	03 26	09 19.69	+07 30.0					
1985	04 05	09 21.38	+08 50.0	1.552	2.278	-1.66	+3.0	17.2
1985	04 15	09 25.90	+09 49.9					
1985	04 25	09 32.95	+10 29.5	1.766	2.285	-1.44	+2.3	17.6

1983 VV1 a,e,i = 3.10, 0.04, 3 Elements MPC 8540

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 52.19	+15 03.3	2.850	2.988	88.3	19.3	18.1
1984	11 26	09 59.05	+14 28.0					
1984	12 06	10 04.10	+14 01.5	2.575	2.992	105.4	18.5	17.9
1984	12 16	10 07.13	+13 45.3					
1984	12 26	10 07.92	+13 40.5	2.325	2.997	124.8	15.6	17.6
1985	01 05	10 06.37	+13 47.5					
1985	01 15	10 02.50	+14 05.6	2.133	3.003	146.5	10.4	17.3
1985	01 25	09 56.55	+14 32.6					
1985	02 04	09 49.05	+15 05.1	2.032	3.008	170.1	3.2	16.9
1985	02 14	09 40.77	+15 38.6					
1985	02 24	09 32.60	+16 08.8	2.047	3.014	165.3	4.8	17.0
1985	03 06	09 25.45	+16 31.9					
1985	03 16	09 20.02	+16 45.8	2.172	3.021	142.3	11.6	17.4
1985	03 26	09 16.73	+16 49.6					
1985	04 05	09 15.78	+16 43.2	2.382	3.028	121.6	16.4	17.7
1985	04 15	09 17.11	+16 27.1					
1985	04 25	09 20.56	+16 02.1	2.642	3.035	103.3	18.8	18.0

1978 WH14 a,e,i = 3.04, 0.16, 2 Elements MPC 8276

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	09 47.05	+13 14.1	2.477	2.648	88.8	21.9	18.1
1984	11 26	09 55.29	+12 35.5					
1984	12 06	10 01.56	+12 07.0	2.235	2.671	105.4	20.8	17.9
1984	12 16	10 05.63	+11 50.4					
1984	12 26	10 07.26	+11 47.6	2.016	2.696	124.3	17.5	17.6
1985	01 05	10 06.31	+11 59.5					
1985	01 15	10 02.83	+12 25.5	1.851	2.722	145.9	11.7	17.3
1985	01 25	09 57.08	+13 03.4					
1985	02 04	09 49.66	+13 49.3	1.775	2.750	169.7	3.7	16.9
1985	02 14	09 41.44	+14 37.5					
1985	02 24	09 33.41	+15 22.6	1.809	2.779	165.8	5.0	17.1
1985	03 06	09 26.56	+15 59.6					
1985	03 16	09 21.62	+16 25.9	1.952	2.810	142.8	12.4	17.5
1985	03 26	09 19.01	+16 40.0					
1985	04 05	09 18.87	+16 42.1	2.177	2.841	122.3	17.3	17.9
1985	04 15	09 21.07	+16 32.8					
1985	04 25	09 25.41	+16 13.0	2.453	2.872	104.3	19.8	18.2

1983 QA a,e,i = 2.36, 0.26, 9 Elements MPC 8385

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	11 16	10 06.71	+14 03.5	2.584	2.679	84.6	21.6	19.3
1984	11 26	10 13.53	+13 13.4					
1984	12 06	10 18.30	+12 32.7	2.344	2.720	101.7	20.8	19.1
1984	12 16	10 20.77	+12 02.8					
1984	12 26	10 20.69	+11 45.2	2.118	2.758	121.2	17.8	18.8
1985	01 05	10 17.89	+11 40.4					
1985	01 15	10 12.39	+11 48.1	1.941	2.793	143.5	12.1	18.5
1985	01 25	10 04.44	+12 06.6					
1985	02 04	09 54.65	+12 32.5	1.853	2.825	168.1	4.1	18.2
1985	02 14	09 43.96	+13 01.2					
1985	02 24	09 33.45	+13 28.1	1.882	2.854	166.4	4.7	18.3
1985	03 06	09 24.19	+13 49.3					
1985	03 16	09 16.98	+14 02.5	2.026	2.879	142.4	12.2	18.7
1985	03 26	09 12.26	+14 06.5					
1985	04 05	09 10.19	+14 01.2	2.255	2.901	121.1	17.2	19.1
1985	04 15	09 10.64	+13 47.0					
1985	04 25	09 13.37	+13 24.4	2.533	2.919	102.4	19.7	19.4

2535 P-L a,e,i = 3.14, 0.16, 2 Elements MPC 9069

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	10 10.86	+11 09.7	3.153	3.507	102.9	15.9	19.5
1984	12 16	10 12.77	+11 02.8					
1984	12 26	10 12.78	+11 06.8	2.894	3.525	122.8	13.6	19.3
1985	01 05	10 10.82	+11 22.1					
1985	01 15	10 06.95	+11 48.1	2.693	3.542	144.7	9.2	19.0
1985	01 25	10 01.38	+12 23.2					
1985	02 04	09 54.54	+13 04.6	2.587	3.558	168.4	3.2	18.7
1985	02 14	09 47.00	+13 48.5					
1985	02 24	09 39.46	+14 30.9	2.600	3.573	167.5	3.4	18.7
1985	03 06	09 32.63	+15 08.4					
1985	03 16	09 27.08	+15 38.3	2.731	3.586	144.3	9.3	19.1
1985	03 26	09 23.22	+15 59.2					
1985	04 05	09 21.26	+16 10.5	2.954	3.598	123.0	13.5	19.3
1985	04 15	09 21.23	+16 12.4					
1985	04 25	09 23.05	+16 05.4	3.233	3.608	103.8	15.7	19.6
1985	05 05	09 26.57	+15 50.2					
1985	05 15	09 31.58	+15 27.3	3.533	3.617	86.6	16.2	19.8

1980 DC a,e,i = 3.04, 0.10, 9 Elements MPC 7367

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	10 17.85	+17 21.6	2.901	3.273	103.4	17.0	17.8
1984	12 16	10 20.51	+17 11.3					
1984	12 26	10 21.07	+17 11.3	2.621	3.261	122.9	14.7	17.5
1985	01 05	10 19.41	+17 21.4					
1985	01 15	10 15.50	+17 40.2	2.398	3.249	144.4	10.2	17.2
1985	01 25	10 09.50	+18 05.4					
1985	02 04	10 01.84	+18 33.2	2.267	3.236	167.1	3.9	16.8
1985	02 14	09 53.19	+18 59.3					
1985	02 24	09 44.35	+19 19.7	2.253	3.222	166.0	4.3	16.8
1985	03 06	09 36.24	+19 31.0					
1985	03 16	09 29.58	+19 31.8	2.353	3.207	143.4	10.7	17.1
1985	03 26	09 24.89	+19 21.9					
1985	04 05	09 22.45	+19 01.8	2.543	3.191	122.3	15.4	17.4
1985	04 15	09 22.28	+18 32.6					
1985	04 25	09 24.26	+17 55.3	2.785	3.175	103.5	17.9	17.6
1985	05 05	09 28.20	+17 10.6					
1985	05 15	09 33.85	+16 19.5	3.048	3.159	86.9	18.6	17.8

(2994) 1975 PA a,e,i = 2.42, 0.23, 2 Elements MPC 8465

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	10 22.78	+12 12.9	2.628	2.971	100.5	19.0	20.4
1984	12 16	10 25.88	+11 58.1					
1984	12 26	10 26.75	+11 55.8	2.359	2.973	119.9	16.7	20.1
1985	01 05	10 25.22	+12 06.7					
1985	01 15	10 21.22	+12 30.7	2.138	2.973	141.7	11.8	19.8
1985	01 25	10 14.87	+13 06.2					
1985	02 04	10 06.58	+13 49.7	2.005	2.970	165.7	4.7	19.4
1985	02 14	09 57.07	+14 36.3					
1985	02 24	09 47.26	+15 20.7	1.986	2.963	168.9	3.7	19.4
1985	03 06	09 38.18	+15 58.1					
1985	03 16	09 30.69	+16 25.2	2.085	2.954	144.8	11.2	19.7
1985	03 26	09 25.38	+16 40.5					
1985	04 05	09 22.57	+16 43.8	2.273	2.941	123.1	16.6	20.0
1985	04 15	09 22.25	+16 35.7					
1985	04 25	09 24.29	+16 17.3	2.514	2.926	104.1	19.5	20.3
1985	05 05	09 28.46	+15 49.3					
1985	05 15	09 34.47	+15 12.7	2.773	2.907	87.4	20.3	20.5

1978 RD6 a,e,i = 2.74, 0.16, 14 Elements MPC 8466

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 06	10 18.59	-03 22.7	2.922	3.174	95.7	18.0	19.2
1984 12 16	10 21.66	-04 09.3					
1984 12 26	10 22.80	-04 44.8	2.649	3.177	113.9	16.4	19.0
1985 01 05	10 21.88	-05 06.4					
1985 01 15	10 18.88	-05 11.7	2.417	3.179	133.9	12.9	18.7
1985 01 25	10 13.93	-04 58.7					
1985 02 04	10 07.36	-04 26.5	2.260	3.178	154.5	7.7	18.4
1985 02 14	09 59.74	-03 36.5					
1985 02 24	09 51.82	-02 31.8	2.210	3.176	165.0	4.6	18.3
1985 03 06	09 44.39	-01 17.6					
1985 03 16	09 38.18	-00 00.1	2.276	3.172	149.2	9.2	18.5
1985 03 26	09 33.72	+01 15.1					
1985 04 05	09 31.34	+02 23.1	2.442	3.166	128.7	14.3	18.8
1985 04 15	09 31.12	+03 20.8					
1985 04 25	09 33.00	+04 06.4	2.674	3.158	109.7	17.5	19.0
1985 05 05	09 36.82	+04 39.3					
1985 05 15	09 42.35	+04 59.5	2.937	3.148	92.5	18.7	19.3

(2991) 1982 HV a,e,i = 2.34, 0.22, 5 Elements MPC 8464

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 06	10 21.90	+13 56.1	2.447	2.812	101.3	20.1	19.7
1984 12 16	10 26.14	+13 55.9					
1984 12 26	10 28.13	+14 10.3	2.166	2.794	120.3	17.7	19.3
1985 01 05	10 27.61	+14 40.4					
1985 01 15	10 24.44	+15 25.8	1.933	2.773	141.8	12.7	18.9
1985 01 25	10 18.64	+16 24.3					
1985 02 04	10 10.57	+17 31.2	1.785	2.749	165.1	5.3	18.5
1985 02 14	10 00.94	+18 39.6					
1985 02 24	09 50.75	+19 42.3	1.750	2.723	166.8	4.8	18.5
1985 03 06	09 41.20	+20 32.6					
1985 03 16	09 33.32	+21 07.0	1.827	2.693	143.5	12.7	18.8
1985 03 26	09 27.85	+21 24.2					
1985 04 05	09 25.17	+21 24.9	1.990	2.660	122.1	18.6	19.0
1985 04 15	09 25.31	+21 11.1					
1985 04 25	09 28.11	+20 44.4	2.201	2.625	103.5	21.9	19.3
1985 05 05	09 33.29	+20 06.5					
1985 05 15	09 40.51	+19 18.7	2.427	2.587	87.4	23.0	19.5

(2972) 1939 TB a,e,i = 2.15, 0.17, 1 Elements MPC 8395

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 06	10 26.14	+08 29.8	2.097	2.444	98.4	23.5	18.6
1984 12 16	10 31.32	+07 55.5					
1984 12 26	10 34.00	+07 35.7	1.860	2.463	116.6	20.9	18.3
1985 01 05	10 33.90	+07 32.3					
1985 01 15	10 30.86	+07 46.8	1.662	2.480	137.8	15.5	17.9
1985 01 25	10 24.90	+08 19.1					
1985 02 04	10 16.44	+09 06.6	1.537	2.493	161.9	7.1	17.6
1985 02 14	10 06.31	+10 04.1					
1985 02 24	09 55.64	+11 04.8	1.519	2.503	172.2	3.1	17.4
1985 03 06	09 45.75	+12 01.3					
1985 03 16	09 37.74	+12 47.8	1.613	2.511	147.6	12.3	17.8
1985 03 26	09 32.35	+13 21.0					
1985 04 05	09 29.92	+13 39.7	1.795	2.515	125.8	18.8	18.2
1985 04 15	09 30.38	+13 44.0					
1985 04 25	09 33.52	+13 34.9	2.030	2.515	107.0	22.5	18.6
1985 05 05	09 39.01	+13 13.3					
1985 05 15	09 46.46	+12 40.6	2.284	2.513	90.9	23.7	18.8

(2967) 1977 SS1 a,e,i = 3.21, 0.12, 18 Elements MPC 8388

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	10 38.96	+30 27.3	2.817	3.189	103.1	17.5	17.7
1984	12 16	10 43.24	+31 00.9					
1984	12 26	10 45.20	+31 46.4	2.595	3.213	120.9	15.2	17.5
1985	01 05	10 44.62	+32 41.6					
1985	01 15	10 41.43	+33 42.2	2.427	3.236	139.2	11.4	17.2
1985	01 25	10 35.71	+34 42.6					
1985	02 04	10 27.88	+35 35.4	2.345	3.260	153.9	7.6	17.1
1985	02 14	10 18.63	+36 13.9					
1985	02 24	10 08.90	+36 32.8	2.371	3.283	152.9	7.9	17.1
1985	03 06	09 59.73	+36 29.6					
1985	03 16	09 52.01	+36 05.0	2.502	3.305	137.6	11.7	17.4
1985	03 26	09 46.35	+35 21.8					
1985	04 05	09 43.05	+34 23.6	2.717	3.328	119.7	15.1	17.6
1985	04 15	09 42.15	+33 14.3					
1985	04 25	09 43.48	+31 57.1	2.984	3.349	102.5	17.1	17.9
1985	05 05	09 46.82	+30 34.1					
1985	05 15	09 51.87	+29 07.2	3.275	3.370	86.6	17.4	18.1

1981 EH14 a,e,i = 2.67, 0.18, 15 Elements MPC 8392

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	10 32.20	-06 24.1	2.584	2.787	91.4	20.7	19.8
1984	12 16	10 36.99	-07 26.7					
1984	12 26	10 39.72	-08 17.5	2.351	2.821	108.5	19.3	19.6
1985	01 05	10 40.20	-08 53.2					
1985	01 15	10 38.35	-09 10.7	2.145	2.854	127.6	15.8	19.3
1985	01 25	10 34.22	-09 06.8					
1985	02 04	10 28.12	-08 39.7	2.001	2.885	148.1	10.4	19.0
1985	02 14	10 20.61	-07 49.7					
1985	02 24	10 12.48	-06 39.4	1.953	2.915	163.2	5.6	18.9
1985	03 06	10 04.63	-05 14.7					
1985	03 16	09 57.92	-03 43.1	2.018	2.943	153.6	8.7	19.1
1985	03 26	09 52.97	-02 12.1					
1985	04 05	09 50.19	-00 48.2	2.187	2.969	133.9	14.1	19.4
1985	04 15	09 49.67	+00 24.2					
1985	04 25	09 51.36	+01 22.6	2.429	2.994	114.8	17.8	19.7
1985	05 05	09 55.08	+02 06.2					
1985	05 15	10 00.58	+02 35.0	2.712	3.017	97.6	19.4	20.0

1981 EO7 a,e,i = 2.60, 0.11, 13 Elements MPC 8392

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	10 30.85	-04 38.2	2.319	2.557	92.3	22.6	19.4
1984	12 16	10 36.96	-05 44.8					
1984	12 26	10 40.94	-06 38.9	2.086	2.579	109.0	21.1	19.1
1985	01 05	10 42.55	-07 17.1					
1985	01 15	10 41.67	-07 35.8	1.880	2.602	127.9	17.4	18.8
1985	01 25	10 38.27	-07 31.7					
1985	02 04	10 32.63	-07 02.4	1.732	2.625	148.6	11.3	18.5
1985	02 14	10 25.31	-06 08.2					
1985	02 24	10 17.15	-04 52.2	1.678	2.647	165.2	5.5	18.3
1985	03 06	10 09.19	-03 21.3					
1985	03 16	10 02.41	-01 44.2	1.733	2.668	155.0	9.1	18.5
1985	03 26	09 57.53	-00 09.3					
1985	04 05	09 55.03	+01 16.1	1.889	2.689	134.8	15.3	18.9
1985	04 15	09 55.02	+02 27.5					
1985	04 25	09 57.41	+03 22.8	2.117	2.710	115.7	19.5	19.2
1985	05 05	10 01.99	+04 01.1					
1985	05 15	10 08.47	+04 23.3	2.384	2.729	98.8	21.5	19.6

1979 OB15 a,e,i = 2.35, 0.19, 3 Elements MPC 8402

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 06	10 42.69	+06 27.6	2.533	2.779	93.9	20.7	19.2
1984 12 16	10 47.54	+05 47.0					
1984 12 26	10 50.27	+05 18.0	2.268	2.790	112.0	19.1	18.9
1985 01 05	10 50.65	+05 02.6					
1985 01 15	10 48.53	+05 02.2	2.037	2.798	132.7	15.0	18.6
1985 01 25	10 43.86	+05 17.4					
1985 02 04	10 36.89	+05 47.3	1.875	2.803	155.9	8.3	18.3
1985 02 14	10 28.15	+06 29.1					
1985 02 24	10 18.47	+07 18.1	1.817	2.806	176.8	1.1	17.8
1985 03 06	10 08.91	+08 08.7					
1985 03 16	10 00.45	+08 55.0	1.877	2.805	154.0	8.9	18.3
1985 03 26	09 53.90	+09 33.0					
1985 04 05	09 49.75	+09 59.5	2.037	2.802	131.5	15.5	18.6
1985 04 15	09 48.16	+10 13.7					
1985 04 25	09 49.07	+10 15.4	2.263	2.796	111.7	19.5	19.0
1985 05 05	09 52.28	+10 05.0					
1985 05 15	09 57.50	+09 43.4	2.519	2.787	94.5	21.2	19.2

1981 EF17 a,e,i = 2.62, 0.18, 12 Elements MPC 8061

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 06	10 37.06	-01 02.0	2.840	3.044	92.3	18.9	19.6
1984 12 16	10 41.70	-01 43.3					
1984 12 26	10 44.52	-02 13.5	2.544	3.028	110.2	17.7	19.3
1985 01 05	10 45.29	-02 30.0					
1985 01 15	10 43.89	-02 30.2	2.280	3.010	130.2	14.5	19.0
1985 01 25	10 40.29	-02 12.2					
1985 02 04	10 34.68	-01 35.1	2.083	2.990	152.1	8.9	18.7
1985 02 14	10 27.49	-00 39.8					
1985 02 24	10 19.39	+00 30.4	1.987	2.968	170.6	3.1	18.3
1985 03 06	10 11.24	+01 49.8					
1985 03 16	10 03.93	+03 11.9	2.009	2.944	155.7	8.0	18.5
1985 03 26	09 58.17	+04 30.1					
1985 04 05	09 54.51	+05 39.0	2.135	2.918	133.8	14.3	18.8
1985 04 15	09 53.15	+06 35.3					
1985 04 25	09 54.14	+07 17.4	2.334	2.890	113.8	18.6	19.1
1985 05 05	09 57.35	+07 44.6					
1985 05 15	10 02.56	+07 57.6	2.568	2.861	96.2	20.6	19.3

A923 NB a,e,i = 2.76, 0.32, 14 Elements MPC 8466

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 06	10 46.43	-06 44.1	3.148	3.265	88.0	17.6	18.0
1984 12 16	10 49.62	-07 54.0					
1984 12 26	10 50.95	-08 55.1	2.904	3.309	105.7	16.6	17.8
1985 01 05	10 50.29	-09 45.0					
1985 01 15	10 47.58	-10 21.3	2.687	3.351	125.1	13.9	17.6
1985 01 25	10 42.87	-10 41.4					
1985 02 04	10 36.44	-10 43.4	2.534	3.390	145.2	9.6	17.4
1985 02 14	10 28.74	-10 26.9					
1985 02 24	10 20.40	-09 52.8	2.478	3.426	160.3	5.6	17.2
1985 03 06	10 12.19	-09 04.3					
1985 03 16	10 04.81	-08 06.4	2.538	3.460	153.9	7.3	17.4
1985 03 26	09 58.83	-07 04.3					
1985 04 05	09 54.67	-06 03.3	2.706	3.490	135.4	11.6	17.6
1985 04 15	09 52.47	-05 07.8					
1985 04 25	09 52.25	-04 20.6	2.954	3.518	116.4	14.8	17.9
1985 05 05	09 53.91	-03 43.7					
1985 05 15	09 57.25	-03 17.8	3.246	3.543	98.7	16.4	18.2

1980 TP a,e,i = 2.16, 0.19, 2 Elements MPC 8284

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 06	10 42.73	+07 24.0	2.204	2.479	94.2	23.4	20.2
1984 12 16	10 48.82	+06 49.0					
1984 12 26	10 52.61	+06 28.2	1.962	2.501	111.9	21.4	19.9
1985 01 05	10 53.81	+06 23.7					
1985 01 15	10 52.20	+06 37.1	1.750	2.520	132.5	16.7	19.6
1985 01 25	10 47.70	+07 09.0					
1985 02 04	10 40.53	+07 57.5	1.604	2.536	156.0	9.1	19.3
1985 02 14	10 31.29	+08 58.3					
1985 02 24	10 20.94	+10 04.9	1.559	2.549	178.5	0.6	18.7
1985 03 06	10 10.72	+11 09.3					
1985 03 16	10 01.81	+12 04.7	1.629	2.558	153.4	10.0	19.3
1985 03 26	09 55.11	+12 46.6					
1985 04 05	09 51.14	+13 12.9	1.796	2.564	130.8	17.2	19.7
1985 04 15	09 50.02	+13 23.4					
1985 04 25	09 51.62	+13 19.1	2.024	2.566	111.3	21.4	20.1
1985 05 05	09 55.67	+13 01.3					
1985 05 15	10 01.82	+12 31.4	2.280	2.565	94.5	23.1	20.4

1981 EA11 a,e,i = 2.68, 0.20, 11 Elements MPC 7615

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 06	10 49.80	+13 21.0	2.772	3.019	94.8	19.0	19.7
1984 12 16	10 53.74	+12 53.3					
1984 12 26	10 55.58	+12 36.7	2.519	3.048	113.5	17.2	19.5
1985 01 05	10 55.11	+12 31.8					
1985 01 15	10 52.25	+12 38.4	2.304	3.075	134.5	13.2	19.3
1985 01 25	10 47.01	+12 55.0					
1985 02 04	10 39.69	+13 19.0	2.164	3.099	157.7	6.9	19.0
1985 02 14	10 30.84	+13 46.4					
1985 02 24	10 21.23	+14 12.7	2.135	3.122	175.3	1.5	18.6
1985 03 06	10 11.81	+14 33.5					
1985 03 16	10 03.45	+14 45.9	2.225	3.143	152.7	8.3	19.1
1985 03 26	09 56.83	+14 48.2					
1985 04 05	09 52.36	+14 39.9	2.418	3.161	130.6	13.9	19.4
1985 04 15	09 50.19	+14 21.6					
1985 04 25	09 50.26	+13 54.1	2.678	3.177	110.8	17.2	19.7
1985 05 05	09 52.39	+13 18.4					
1985 05 15	09 56.35	+12 35.3	2.970	3.191	93.2	18.4	20.0

1983 WF1 a,e,i = 3.18, 0.31, 21 Elements MPC 8679

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984 12 06	10 48.28	+24 36.6	3.268	3.562	-0.55	+1.4	18.7
1984 12 16	10 52.11	+25 26.9					
1984 12 26	10 54.01	+26 30.3	3.043	3.610	-0.60	+1.8	18.5
1985 01 05	10 53.82	+27 45.3					
1985 01 15	10 51.49	+29 08.8	2.872	3.657	-0.67	+2.1	18.3
1985 01 25	10 47.06	+30 36.1					
1985 02 04	10 40.79	+32 00.8	2.791	3.702	-0.73	+2.1	18.2
1985 02 14	10 33.18	+33 16.7					
1985 02 24	10 24.89	+34 17.8	2.822	3.744	-0.76	+1.8	18.2
1985 03 06	10 16.72	+35 00.3					
1985 03 16	10 09.42	+35 22.9	2.965	3.785	-0.74	+1.3	18.5
1985 03 26	10 03.57	+35 26.2					
1985 04 05	09 59.58	+35 12.5	3.198	3.824	-0.69	+0.9	18.7
1985 04 15	09 57.59	+34 44.8					
1985 04 25	09 57.60	+34 06.0	3.488	3.861	-0.61	+0.8	19.0
1985 05 05	09 59.48	+33 18.5					
1985 05 15	10 03.01	+32 24.5	3.803	3.896	-0.55	+0.8	19.2

(3018) 1982 KM a,e,i = 2.37, 0.19, 5 Elements MPC 8671

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	10 45.18	+02 23.6	2.557	2.768	91.7	20.8	18.7
1984	12 16	10 50.85	+01 30.2					
1984	12 26	10 54.58	+00 47.2	2.267	2.751	109.2	19.7	18.4
1985	01 05	10 56.10	+00 17.0					
1985	01 15	10 55.21	+00 01.9	2.004	2.732	128.9	16.3	18.1
1985	01 25	10 51.78	+00 04.0					
1985	02 04	10 45.92	+00 24.6	1.805	2.710	151.1	10.1	17.7
1985	02 14	10 38.04	+01 02.6					
1985	02 24	10 28.84	+01 55.3	1.702	2.686	172.2	2.9	17.3
1985	03 06	10 19.36	+02 57.1					
1985	03 16	10 10.66	+04 01.3	1.713	2.659	157.3	8.3	17.5
1985	03 26	10 03.67	+05 01.2					
1985	04 05	09 59.07	+05 51.6	1.827	2.630	134.8	15.7	17.8
1985	04 15	09 57.13	+06 29.1					
1985	04 25	09 57.87	+06 52.4	2.010	2.598	114.8	20.6	18.1
1985	05 05	10 01.14	+07 01.0					
1985	05 15	10 06.66	+06 55.5	2.228	2.565	97.6	23.0	18.3

1983 QG a,e,i = 2.64, 0.35, 14 Elements MPC 8678

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	10 56.53	+21 16.9	2.896	3.159	96.3	18.1	19.7
1984	12 16	11 00.97	+21 49.4					
1984	12 26	11 03.33	+22 36.7	2.668	3.208	114.9	16.1	19.5
1985	01 05	11 03.39	+23 37.9					
1985	01 15	11 01.05	+24 50.5	2.484	3.254	135.0	12.4	19.3
1985	01 25	10 56.30	+26 10.4					
1985	02 04	10 49.40	+27 31.2	2.381	3.297	154.2	7.5	19.1
1985	02 14	10 40.85	+28 45.5					
1985	02 24	10 31.42	+29 46.7	2.389	3.336	159.9	5.8	19.1
1985	03 06	10 22.02	+30 29.5					
1985	03 16	10 13.56	+30 51.7	2.513	3.373	144.5	9.9	19.4
1985	03 26	10 06.73	+30 53.8					
1985	04 05	10 01.99	+30 37.9	2.731	3.406	125.1	13.9	19.7
1985	04 15	09 59.50	+30 07.4					
1985	04 25	09 59.23	+29 25.2	3.010	3.436	106.6	16.3	19.9
1985	05 05	10 01.02	+28 33.9					
1985	05 15	10 04.62	+27 35.7	3.315	3.462	89.8	17.0	20.2

1983 RJ a,e,i = 2.21, 0.20, 8 Elements MPC 8285

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	10 53.97	+16 11.8	2.301	2.580	94.9	22.4	18.9
1984	12 16	11 00.37	+16 06.2					
1984	12 26	11 04.49	+16 15.9	2.055	2.598	112.7	20.4	18.6
1985	01 05	11 06.02	+16 42.1					
1985	01 15	11 04.71	+17 24.2	1.842	2.612	132.9	16.0	18.3
1985	01 25	11 00.40	+18 20.0					
1985	02 04	10 53.26	+19 24.4	1.698	2.624	154.9	9.2	18.0
1985	02 14	10 43.82	+20 29.9					
1985	02 24	10 32.99	+21 28.0	1.656	2.632	168.2	4.4	17.7
1985	03 06	10 22.04	+22 11.0					
1985	03 16	10 12.20	+22 34.3	1.727	2.637	150.2	10.8	18.0
1985	03 26	10 04.46	+22 37.1					
1985	04 05	09 59.45	+22 20.6	1.893	2.639	128.9	17.2	18.4
1985	04 15	09 57.31	+21 48.0					
1985	04 25	09 57.96	+21 02.1	2.120	2.637	109.9	21.0	18.7
1985	05 05	10 01.13	+20 05.4					
1985	05 15	10 06.46	+18 59.9	2.373	2.632	93.3	22.6	19.0

(3025) 1982 QR a,e,i = 3.20, 0.08, 21 Elements MPC 8674

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	10 55.87	-07 28.9	3.124	3.201	85.5	17.9	18.4
1984	12 16	11 00.05	-09 11.2					
1984	12 26	11 02.46	-10 48.1	2.860	3.217	102.4	17.4	18.2
1985	01 05	11 02.91	-12 17.4					
1985	01 15	11 01.27	-13 36.4	2.621	3.233	120.5	15.2	18.0
1985	01 25	10 57.50	-14 42.0					
1985	02 04	10 51.76	-15 30.9	2.439	3.249	139.1	11.5	17.8
1985	02 14	10 44.41	-16 00.5					
1985	02 24	10 36.02	-16 09.4	2.346	3.265	154.0	7.6	17.6
1985	03 06	10 27.38	-15 58.4					
1985	03 16	10 19.29	-15 30.6	2.361	3.280	153.2	7.9	17.6
1985	03 26	10 12.46	-14 50.8					
1985	04 05	10 07.45	-14 05.0	2.481	3.295	138.2	11.7	17.8
1985	04 15	10 04.51	-13 18.6					
1985	04 25	10 03.73	-12 36.3	2.682	3.309	120.6	15.2	18.1
1985	05 05	10 05.05	-12 01.5					
1985	05 15	10 08.28	-11 36.3	2.934	3.323	103.8	17.2	18.3

1979 TA a,e,i = 2.44, 0.22, 2 Elements MPC 8402

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	10 56.96	+05 44.7	2.678	2.858	90.3	20.2	19.9
1984	12 16	11 02.18	+05 03.9					
1984	12 26	11 05.41	+04 34.5	2.418	2.881	108.3	18.9	19.7
1985	01 05	11 06.42	+04 18.3					
1985	01 15	11 05.06	+04 16.5	2.185	2.902	128.6	15.4	19.4
1985	01 25	11 01.25	+04 29.8					
1985	02 04	10 55.15	+04 57.6	2.016	2.920	151.4	9.3	19.1
1985	02 14	10 47.20	+05 37.3					
1985	02 24	10 38.07	+06 25.1	1.947	2.935	175.7	1.5	18.6
1985	03 06	10 28.71	+07 15.3					
1985	03 16	10 20.07	+08 02.6	1.997	2.947	158.9	7.0	19.0
1985	03 26	10 12.95	+08 42.4					
1985	04 05	10 07.93	+09 11.5	2.154	2.956	136.0	13.6	19.3
1985	04 15	10 05.25	+09 28.5					
1985	04 25	10 04.94	+09 33.2	2.385	2.963	115.6	17.8	19.7
1985	05 05	10 06.88	+09 25.8					
1985	05 15	10 10.80	+09 07.3	2.655	2.966	97.8	19.7	19.9

(3014) 1979 TM a,e,i = 2.36, 0.23, 1 Elements MPC 8669

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	10 56.46	+06 49.4	2.715	2.901	90.8	19.8	18.9
1984	12 16	11 01.95	+06 17.8					
1984	12 26	11 05.54	+05 58.0	2.427	2.897	108.8	18.7	18.7
1985	01 05	11 06.98	+05 52.0					
1985	01 15	11 06.08	+06 00.8	2.167	2.890	129.0	15.3	18.3
1985	01 25	11 02.72	+06 25.3					
1985	02 04	10 56.98	+07 04.4	1.972	2.879	151.9	9.3	18.0
1985	02 14	10 49.24	+07 55.4					
1985	02 24	10 40.14	+08 53.6	1.877	2.865	176.6	1.2	17.4
1985	03 06	10 30.61	+09 52.8					
1985	03 16	10 21.65	+10 46.9	1.900	2.848	158.4	7.4	17.8
1985	03 26	10 14.17	+11 30.9					
1985	04 05	10 08.82	+12 01.8	2.029	2.828	135.2	14.4	18.1
1985	04 15	10 05.92	+12 18.4					
1985	04 25	10 05.55	+12 20.9	2.230	2.805	114.8	19.0	18.4
1985	05 05	10 07.58	+12 09.9					
1985	05 15	10 11.76	+11 46.8	2.468	2.779	97.0	21.2	18.7

1983 QD a,e,i = 2.66, 0.17, 12 Elements MPC 8678

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	12 06	10 56.11	+05 09.2	2.201	2.415	-0.85	+9.1	16.7
1984	12 16	11 03.08	+03 38.5					
1984	12 26	11 07.81	+02 16.5	1.976	2.449	-0.96	+9.9	16.4
1985	01 05	11 10.01	+01 05.2					
1985	01 15	11 09.45	+00 06.7	1.776	2.483	-1.10	+10.9	16.2
1985	01 25	11 06.02	-00 36.9					
1985	02 04	10 59.85	-01 04.1	1.631	2.518	-1.25	+11.9	15.8
1985	02 14	10 51.45	-01 14.7					
1985	02 24	10 41.64	-01 09.9	1.576	2.553	-1.34	+12.5	15.6
1985	03 06	10 31.58	-00 53.3					
1985	03 16	10 22.42	-00 30.2	1.631	2.589	-1.30	+12.1	15.8
1985	03 26	10 15.11	-00 06.0					
1985	04 05	10 10.29	+00 14.4	1.789	2.625	-1.16	+10.9	16.2
1985	04 15	10 08.16	+00 27.3					
1985	04 25	10 08.67	+00 30.9	2.020	2.660	-0.99	+9.6	16.6
1985	05 05	10 11.60	+00 23.9					
1985	05 15	10 16.63	+00 06.3	2.294	2.695	-0.85	+8.3	17.0

1983 PA a,e,i = 2.41, 0.39, 20 Elements MPC 8394

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	12 06	11 10.12	-10 27.9	2.930	2.944	-0.45	+4.8	19.1
1984	12 16	11 14.28	-12 11.2					
1984	12 26	11 16.51	-13 48.1	2.703	3.001	-0.51	+4.8	19.0
1985	01 05	11 16.56	-15 16.1					
1985	01 15	11 14.28	-16 32.1	2.488	3.053	-0.58	+5.1	18.8
1985	01 25	11 09.60	-17 32.4					
1985	02 04	11 02.65	-18 13.3	2.322	3.102	-0.65	+5.6	18.6
1985	02 14	10 53.84	-18 31.7					
1985	02 24	10 43.82	-18 25.7	2.240	3.146	-0.70	+6.1	18.4
1985	03 06	10 33.48	-17 56.5					
1985	03 16	10 23.74	-17 08.0	2.267	3.185	-0.69	+6.5	18.5
1985	03 26	10 15.42	-16 06.4					
1985	04 05	10 09.11	-14 58.8	2.403	3.221	-0.63	+6.4	18.7
1985	04 15	10 05.08	-13 52.0					
1985	04 25	10 03.39	-12 51.0	2.623	3.252	-0.56	+5.9	19.0
1985	05 05	10 03.92	-11 59.7					
1985	05 15	10 06.45	-11 19.9	2.896	3.279	-0.49	+5.2	19.3

(2980) 1981 EU17 a,e,i = 2.57, 0.18, 7 Elements MPC 8398

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	10 47.77	+02 40.5	2.119	2.356	91.2	24.7	18.1
1984	12 16	10 55.94	+01 53.8					
1984	12 26	11 01.93	+01 21.7	1.903	2.394	107.8	23.0	17.8
1985	01 05	11 05.47	+01 07.0					
1985	01 15	11 06.34	+01 12.1	1.710	2.432	127.0	18.8	17.5
1985	01 25	11 04.42	+01 38.8					
1985	02 04	10 59.84	+02 26.9	1.572	2.471	149.2	11.8	17.2
1985	02 14	10 53.08	+03 33.6					
1985	02 24	10 44.90	+04 53.2	1.525	2.510	173.4	2.6	16.8
1985	03 06	10 36.40	+06 17.4					
1985	03 16	10 28.69	+07 37.4	1.587	2.549	161.1	7.3	17.2
1985	03 26	10 22.70	+08 46.2					
1985	04 05	10 19.03	+09 39.2	1.753	2.588	138.4	14.9	17.6
1985	04 15	10 17.90	+10 14.4					
1985	04 25	10 19.28	+10 32.2	1.991	2.625	118.6	19.7	18.0
1985	05 05	10 22.98	+10 33.5					
1985	05 15	10 28.67	+10 20.2	2.270	2.662	101.4	21.9	18.4

1973 SZ1 a,e,i = 3.98, 0.12, 3 Elements MPC 8383

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	10 55.35	+09 51.2	3.447	3.622	92.2	15.8	18.5
1984	12 16	11 00.12	+09 31.5					
1984	12 26	11 03.34	+09 21.8	3.142	3.607	110.5	14.8	18.3
1985	01 05	11 04.85	+09 22.9					
1985	01 15	11 04.56	+09 35.0	2.873	3.593	130.7	12.0	18.0
1985	01 25	11 02.44	+09 57.7					
1985	02 04	10 58.63	+10 29.6	2.675	3.579	152.6	7.3	17.8
1985	02 14	10 53.40	+11 07.8					
1985	02 24	10 47.22	+11 48.8	2.580	3.566	174.6	1.5	17.3
1985	03 06	10 40.68	+12 28.4					
1985	03 16	10 34.45	+13 02.8	2.603	3.555	160.2	5.4	17.6
1985	03 26	10 29.11	+13 28.8					
1985	04 05	10 25.16	+13 44.5	2.735	3.544	138.2	10.8	17.9
1985	04 15	10 22.89	+13 49.1					
1985	04 25	10 22.44	+13 42.6	2.947	3.534	118.1	14.5	18.1
1985	05 05	10 23.81	+13 25.6					
1985	05 15	10 26.87	+12 58.9	3.206	3.526	100.0	16.4	18.3

(3027) 1978 PQ2 a,e,i = 2.67, 0.22, 2 Elements MPC 8680

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	11 04.82	+04 17.9	3.081	3.201	87.9	17.9	19.9
1984	12 16	11 09.74	+03 44.6					
1984	12 26	11 12.94	+03 22.1	2.803	3.216	106.0	17.1	19.7
1985	01 05	11 14.20	+03 11.9					
1985	01 15	11 13.39	+03 15.0	2.549	3.230	126.3	14.2	19.4
1985	01 25	11 10.46	+03 32.3					
1985	02 04	11 05.50	+04 03.1	2.357	3.240	148.7	9.1	19.1
1985	02 14	10 58.83	+04 45.5					
1985	02 24	10 50.99	+05 36.2	2.264	3.248	172.7	2.2	18.7
1985	03 06	10 42.70	+06 30.4					
1985	03 16	10 34.75	+07 23.1	2.291	3.254	162.6	5.2	18.9
1985	03 26	10 27.87	+08 09.8					
1985	04 05	10 22.64	+08 46.9	2.431	3.258	139.6	11.5	19.3
1985	04 15	10 19.38	+09 12.6					
1985	04 25	10 18.20	+09 26.2	2.653	3.259	118.7	15.7	19.5
1985	05 05	10 19.08	+09 27.9					
1985	05 15	10 21.84	+09 18.2	2.922	3.257	100.2	17.8	19.8

(3009) 1973 SM2 a,e,i = 2.20, 0.20, 5 Elements MPC 8668

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	11 05.61	+09 40.2	2.459	2.646	89.8	21.9	20.1
1984	12 16	11 12.35	+09 03.5					
1984	12 26	11 17.10	+08 39.0	2.184	2.646	107.1	20.8	19.8
1985	01 05	11 19.56	+08 28.5					
1985	01 15	11 19.46	+08 33.1	1.933	2.643	126.9	17.3	19.4
1985	01 25	11 16.58	+08 53.4					
1985	02 04	11 10.92	+09 28.1	1.740	2.636	149.4	11.0	19.1
1985	02 14	11 02.78	+10 13.7					
1985	02 24	10 52.82	+11 05.0	1.640	2.626	173.5	2.5	18.6
1985	03 06	10 42.09	+11 54.8					
1985	03 16	10 31.78	+12 36.7	1.656	2.613	159.8	7.5	18.8
1985	03 26	10 23.02	+13 05.8					
1985	04 05	10 16.61	+13 19.6	1.777	2.596	136.5	15.4	19.2
1985	04 15	10 12.96	+13 17.7					
1985	04 25	10 12.14	+13 01.1	1.970	2.575	116.1	20.5	19.5
1985	05 05	10 14.00	+12 31.1					
1985	05 15	10 18.24	+11 49.3	2.198	2.552	98.5	23.1	19.8

1982 GG a,e,i = 2.25, 0.17, 6 Elements MPC 8401

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	11 04.73	+12 03.7	2.404	2.614	91.0	22.1	19.0
1984	12 16	11 12.12	+11 34.4					
1984	12 26	11 17.55	+11 18.0	2.124	2.602	108.0	21.1	18.7
1985	01 05	11 20.71	+11 16.3					
1985	01 15	11 21.29	+11 30.2	1.869	2.587	127.4	17.6	18.3
1985	01 25	11 19.05	+11 59.8					
1985	02 04	11 13.93	+12 43.1	1.671	2.570	149.4	11.2	17.9
1985	02 14	11 06.19	+13 35.8					
1985	02 24	10 56.45	+14 31.5	1.567	2.549	171.3	3.4	17.5
1985	03 06	10 45.78	+15 22.0					
1985	03 16	10 35.42	+16 00.5	1.574	2.527	158.6	8.3	17.7
1985	03 26	10 26.57	+16 22.2					
1985	04 05	10 20.13	+16 25.6	1.684	2.502	135.9	16.1	18.0
1985	04 15	10 16.54	+16 11.2					
1985	04 25	10 15.89	+15 40.9	1.863	2.474	115.9	21.5	18.3
1985	05 05	10 18.03	+14 56.7					
1985	05 15	10 22.64	+14 00.7	2.077	2.444	98.7	24.1	18.6

1983 WQ a,e,i = 2.69, 0.13, 10 Elements MPC 8529

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	12 06	11 13.20	+16 42.8	2.837	3.018	-0.65	+4.7	18.1
1984	12 16	11 19.61	+16 40.8					
1984	12 26	11 24.17	+16 52.2	2.569	3.028	-0.72	+5.4	17.9
1985	01 05	11 26.64	+17 17.9					
1985	01 15	11 26.81	+17 57.2	2.331	3.036	-0.81	+6.1	17.6
1985	01 25	11 24.54	+18 48.6					
1985	02 04	11 19.87	+19 48.1	2.157	3.043	-0.92	+6.6	17.3
1985	02 14	11 13.08	+20 50.2					
1985	02 24	11 04.71	+21 48.2	2.081	3.048	-0.99	+6.5	17.1
1985	03 06	10 55.60	+22 35.1					
1985	03 16	10 46.70	+23 05.9	2.119	3.051	-0.98	+5.9	17.2
1985	03 26	10 38.90	+23 18.0					
1985	04 05	10 32.92	+23 11.1	2.262	3.052	-0.91	+5.1	17.5
1985	04 15	10 29.14	+22 47.3					
1985	04 25	10 27.69	+22 08.9	2.479	3.052	-0.81	+4.5	17.8
1985	05 05	10 28.53	+21 18.4					
1985	05 15	10 31.43	+20 18.4	2.737	3.050	-0.71	+4.1	18.0

(3026) 1977 TA1 a,e,i = 3.03, 0.02, 10 Elements MPC 8680

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	11 05.24	-03 53.7	3.030	3.098	84.7	18.5	18.3
1984	12 16	11 11.42	-04 53.2					
1984	12 26	11 16.00	-05 43.9	2.748	3.099	101.6	18.1	18.1
1985	01 05	11 18.76	-06 23.6					
1985	01 15	11 19.54	-06 49.9	2.484	3.099	120.3	15.9	17.8
1985	01 25	11 18.24	-07 00.7					
1985	02 04	11 14.89	-06 54.2	2.271	3.099	141.0	11.6	17.5
1985	02 14	11 09.73	-06 29.5					
1985	02 24	11 03.20	-05 47.5	2.143	3.099	162.0	5.7	17.2
1985	03 06	10 55.97	-04 51.1					
1985	03 16	10 48.81	-03 45.2	2.125	3.099	165.7	4.5	17.1
1985	03 26	10 42.49	-02 35.7					
1985	04 05	10 37.65	-01 28.8	2.220	3.098	145.7	10.5	17.4
1985	04 15	10 34.69	-00 29.3					
1985	04 25	10 33.81	+00 19.2	2.405	3.097	125.3	15.4	17.7
1985	05 05	10 35.02	+00 54.7					
1985	05 15	10 38.19	+01 16.7	2.647	3.095	106.9	18.2	18.0

(2964) 1974 OA1 a,e,i = 2.59, 0.20, 14 Elements MPC 8388

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 06	11 23.50	+04 18.0	2.696	2.766	83.6	20.7	18.3
1984	12 16	11 29.77	+03 05.5					
1984	12 26	11 34.14	+02 01.7	2.449	2.803	100.7	20.2	18.1
1985	01 05	11 36.38	+01 08.1					
1985	01 15	11 36.26	+00 26.1	2.217	2.838	119.9	17.5	17.9
1985	01 25	11 33.62	-00 03.2					
1985	02 04	11 28.48	-00 18.8	2.033	2.872	141.6	12.3	17.6
1985	02 14	11 21.10	-00 21.1					
1985	02 24	11 12.03	-00 11.2	1.936	2.903	165.0	5.1	17.3
1985	03 06	11 02.10	+00 07.8					
1985	03 16	10 52.29	+00 31.6	1.953	2.933	167.7	4.1	17.3
1985	03 26	10 43.54	+00 56.0					
1985	04 05	10 36.60	+01 16.4	2.085	2.961	145.0	11.2	17.7
1985	04 15	10 31.89	+01 29.8					
1985	04 25	10 29.58	+01 34.2	2.305	2.986	123.9	16.2	18.1
1985	05 05	10 29.60	+01 28.6					
1985	05 15	10 31.77	+01 13.0	2.579	3.009	105.4	18.9	18.4

(2997) 1974 MJ a,e,i = 2.56, 0.20, 7 Elements MPC 8531

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 26	11 31.05	+06 33.5	2.669	3.047	103.1	18.3	20.0
1985	01 05	11 33.23	+06 15.5					
1985	01 15	11 33.24	+06 10.1	2.409	3.056	122.8	15.7	19.7
1985	01 25	11 30.93	+06 17.6					
1985	02 04	11 26.31	+06 37.4	2.202	3.061	144.9	10.7	19.4
1985	02 14	11 19.60	+07 07.4					
1985	02 24	11 11.27	+07 44.2	2.088	3.065	168.8	3.6	19.0
1985	03 06	11 02.08	+08 23.2					
1985	03 16	10 52.89	+08 59.3	2.090	3.066	166.1	4.5	19.1
1985	03 26	10 44.59	+09 28.2					
1985	04 05	10 37.92	+09 46.7	2.207	3.064	142.7	11.4	19.4
1985	04 15	10 33.31	+09 53.4					
1985	04 25	10 30.97	+09 48.0	2.411	3.060	121.5	16.3	19.7
1985	05 05	10 30.89	+09 30.9					
1985	05 15	10 32.91	+09 03.1	2.664	3.053	102.9	18.8	20.0
1985	05 25	10 36.83	+08 25.5					
1985	06 04	10 42.40	+07 39.1	2.934	3.044	86.4	19.4	20.2

1976 QN1 a,e,i = 2.27, 0.08, 1 Elements MPC 8284

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 26	11 23.88	+03 21.8	2.006	2.432	103.5	23.1	19.0
1985	01 05	11 28.57	+02 54.8					
1985	01 15	11 30.75	+02 44.4	1.770	2.439	122.1	20.0	18.6
1985	01 25	11 30.16	+02 52.6					
1985	02 04	11 26.70	+03 20.0	1.580	2.445	143.6	13.8	18.3
1985	02 14	11 20.55	+04 05.1					
1985	02 24	11 12.24	+05 04.4	1.472	2.449	167.8	4.9	17.9
1985	03 06	11 02.72	+06 10.9					
1985	03 16	10 53.19	+07 16.5	1.472	2.451	167.0	5.3	17.9
1985	03 26	10 44.84	+08 13.7					
1985	04 05	10 38.62	+08 56.5	1.577	2.452	143.2	14.2	18.3
1985	04 15	10 35.06	+09 22.3					
1985	04 25	10 34.34	+09 30.6	1.761	2.452	122.4	20.3	18.6
1985	05 05	10 36.34	+09 22.0					
1985	05 15	10 40.78	+08 58.3	1.989	2.450	104.7	23.5	19.0
1985	05 25	10 47.35	+08 21.1					
1985	06 04	10 55.71	+07 31.9	2.235	2.446	89.5	24.5	19.3

1971 SP3 a,e,i = 3.14, 0.20, 2 Elements MPC 9071

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 26	11 28.89	+03 58.6	3.310	3.653	102.6	15.2	20.3
1985 01 05	11 30.40	+03 47.2					
1985 01 15	11 30.13	+03 47.1	3.046	3.671	122.7	13.0	20.0
1985 01 25	11 28.02	+03 58.5					
1985 02 04	11 24.13	+04 20.8	2.840	3.688	144.6	8.9	19.8
1985 02 14	11 18.68	+04 52.4					
1985 02 24	11 12.06	+05 30.9	2.729	3.702	168.0	3.2	19.5
1985 03 06	11 04.82	+06 12.7					
1985 03 16	10 57.57	+06 53.8	2.736	3.716	168.1	3.2	19.5
1985 03 26	10 50.93	+07 30.6					
1985 04 05	10 45.44	+08 00.0	2.862	3.727	145.1	8.8	19.8
1985 04 15	10 41.46	+08 20.2					
1985 04 25	10 39.20	+08 30.2	3.081	3.737	123.9	12.9	20.1
1985 05 05	10 38.70	+08 30.0					
1985 05 15	10 39.90	+08 19.9	3.358	3.745	104.8	15.1	20.3
1985 05 25	10 42.68	+08 00.5					
1985 06 04	10 46.87	+07 32.7	3.658	3.752	87.4	15.7	20.5

1982 HQ1 a,e,i = 2.25, 0.20, 7 Elements MPC 8393

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 26	11 34.81	+12 25.6	2.157	2.584	104.5	21.6	19.0
1985 01 05	11 39.74	+12 32.1					
1985 01 15	11 42.29	+12 55.4	1.885	2.557	123.0	18.8	18.6
1985 01 25	11 42.13	+13 35.9					
1985 02 04	11 39.05	+14 31.9	1.664	2.527	143.7	13.4	18.2
1985 02 14	11 33.08	+15 39.1					
1985 02 24	11 24.56	+16 50.5	1.527	2.494	164.3	6.2	17.8
1985 03 06	11 14.33	+17 56.9					
1985 03 16	11 03.59	+18 49.1	1.497	2.458	160.9	7.6	17.8
1985 03 26	10 53.65	+19 20.6					
1985 04 05	10 45.68	+19 28.2	1.571	2.421	139.6	15.5	18.1
1985 04 15	10 40.42	+19 12.9					
1985 04 25	10 38.18	+18 37.1	1.719	2.381	119.4	21.6	18.4
1985 05 05	10 38.96	+17 44.1					
1985 05 15	10 42.48	+16 36.9	1.908	2.339	102.1	25.0	18.6
1985 05 25	10 48.42	+15 17.9					
1985 06 04	10 56.44	+13 48.7	2.109	2.295	87.2	26.2	18.8

1981 EQ27 a,e,i = 2.56, 0.13, 3 Elements MPC 8135

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984 12 26	11 19.82	+03 05.7	1.789	2.245	-1.38	+7.4	16.6
1985 01 05	11 26.99	+02 27.0					
1985 01 15	11 31.76	+02 05.2	1.555	2.234	-1.62	+8.8	16.2
1985 01 25	11 33.80	+02 02.8					
1985 02 04	11 32.92	+02 21.4	1.365	2.225	-1.90	+10.5	15.8
1985 02 14	11 29.16	+03 00.7					
1985 02 24	11 22.92	+03 57.5	1.249	2.220	-2.13	+11.6	15.4
1985 03 06	11 15.08	+05 05.2					
1985 03 16	11 06.86	+06 14.7	1.230	2.217	-2.15	+11.5	15.2
1985 03 26	10 59.54	+07 16.7					
1985 04 05	10 54.25	+08 03.8	1.311	2.218	-1.97	+10.1	15.6
1985 04 15	10 51.64	+08 31.8					
1985 04 25	10 51.95	+08 39.7	1.469	2.222	-1.69	+8.5	16.1
1985 05 05	10 55.11	+08 28.1					
1985 05 15	11 00.82	+07 59.0	1.676	2.229	-1.45	+7.4	16.4
1985 05 25	11 08.74	+07 14.4					
1985 06 04	11 18.51	+06 16.5	1.907	2.239	-1.25	+6.6	16.8

1981 EZ2 a,e,i = 2.54, 0.10, 9 Elements MPC 7138

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	12 26	11 23.07	-06 26.6	1.990	2.363	-1.22	+5.3	17.9
1985	01 05	11 29.66	-07 37.5					
1985	01 15	11 34.04	-08 34.4	1.738	2.346	-1.44	+6.1	17.6
1985	01 25	11 35.90	-09 13.5					
1985	02 04	11 35.05	-09 30.9	1.524	2.331	-1.69	+7.3	17.1
1985	02 14	11 31.51	-09 23.3					
1985	02 24	11 25.59	-08 48.8	1.376	2.317	-1.89	+8.7	16.7
1985	03 06	11 18.03	-07 48.7					
1985	03 16	11 09.92	-06 28.6	1.322	2.305	-1.94	+9.4	16.5
1985	03 26	11 02.47	-04 57.4					
1985	04 05	10 56.80	-03 25.9	1.370	2.295	-1.80	+8.9	16.8
1985	04 15	10 53.62	-02 03.5					
1985	04 25	10 53.29	-00 56.8	1.503	2.287	-1.58	+7.6	17.1
1985	05 05	10 55.80	-00 09.3					
1985	05 15	11 00.94	+00 18.0	1.694	2.281	-1.37	+6.3	17.5
1985	05 25	11 08.39	+00 26.0					
1985	06 04	11 17.81	+00 16.1	1.914	2.278	-1.21	+5.3	17.8

1983 WH1 a,e,i = 3.11, 0.06, 14 Elements MPC 8535

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 26	11 29.27	+09 49.8	2.519	2.928	104.8	19.0	17.3
1985	01 05	11 33.94	+10 16.8					
1985	01 15	11 36.56	+11 00.8	2.268	2.931	123.7	16.2	17.0
1985	01 25	11 36.96	+12 01.6					
1985	02 04	11 35.08	+13 17.1	2.075	2.934	144.5	11.3	16.7
1985	02 14	11 31.08	+14 43.0					
1985	02 24	11 25.31	+16 13.0	1.973	2.938	164.3	5.2	16.4
1985	03 06	11 18.43	+17 39.2					
1985	03 16	11 11.27	+18 53.9	1.982	2.943	161.6	6.1	16.4
1985	03 26	11 04.68	+19 51.4					
1985	04 05	10 59.45	+20 28.4	2.099	2.948	141.5	12.2	16.7
1985	04 15	10 56.08	+20 44.5					
1985	04 25	10 54.85	+20 41.1	2.297	2.955	121.8	16.8	17.0
1985	05 05	10 55.81	+20 20.5					
1985	05 15	10 58.82	+19 45.4	2.545	2.962	104.3	19.3	17.3
1985	05 25	11 03.69	+18 58.0					
1985	06 04	11 10.20	+18 00.6	2.814	2.969	88.7	20.0	17.6

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

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 26	11 35.98	+03 38.5	3.143	3.466	100.9	16.2	19.0
1985	01 05	11 38.93	+03 26.0					
1985	01 15	11 40.11	+03 25.4	2.843	3.444	120.2	14.3	18.7
1985	01 25	11 39.39	+03 37.3					
1985	02 04	11 36.75	+04 01.7	2.594	3.421	141.5	10.3	18.4
1985	02 14	11 32.33	+04 37.3					
1985	02 24	11 26.39	+05 21.8	2.433	3.398	164.6	4.4	18.0
1985	03 06	11 19.47	+06 11.3					
1985	03 16	11 12.20	+07 01.2	2.387	3.373	171.2	2.6	17.9
1985	03 26	11 05.29	+07 47.0					
1985	04 05	10 59.41	+08 24.5	2.457	3.348	148.1	9.1	18.2
1985	04 15	10 55.05	+08 51.2					
1985	04 25	10 52.52	+09 05.5	2.622	3.322	126.7	14.1	18.4
1985	05 05	10 51.94	+09 07.2					
1985	05 15	10 53.29	+08 56.9	2.847	3.296	107.6	17.0	18.7
1985	05 25	10 56.45	+08 35.2					
1985	06 04	11 01.26	+08 03.2	3.098	3.269	90.5	18.1	18.8

(2993) 1970 PA a,e,i = 2.59, 0.20, 12 Elements MPC 8465

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 26	11 46.15	-04 53.4	2.605	2.865	95.1	20.0	18.3
1985	01 05	11 49.35	-06 03.2					
1985	01 15	11 50.40	-07 02.7	2.360	2.896	113.5	18.2	18.1
1985	01 25	11 49.08	-07 49.7					
1985	02 04	11 45.34	-08 22.0	2.153	2.925	133.9	14.0	17.8
1985	02 14	11 39.31	-08 38.1					
1985	02 24	11 31.35	-08 37.0	2.022	2.951	155.6	8.0	17.6
1985	03 06	11 22.16	-08 19.8					
1985	03 16	11 12.61	-07 49.3	1.996	2.976	167.8	4.0	17.4
1985	03 26	11 03.63	-07 10.1					
1985	04 05	10 56.08	-06 28.1	2.086	2.998	150.7	9.4	17.7
1985	04 15	10 50.51	-05 48.7					
1985	04 25	10 47.23	-05 16.1	2.272	3.018	129.9	14.8	18.0
1985	05 05	10 46.28	-04 53.2					
1985	05 15	10 47.54	-04 41.5	2.523	3.036	111.0	18.1	18.3
1985	05 25	10 50.81	-04 41.4					
1985	06 04	10 55.83	-04 52.8	2.805	3.052	94.2	19.4	18.6

1983 WB a,e,i = 3.01, 0.07, 9 Elements MPC 8535

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 26	11 36.80	+14 16.3	2.405	2.819	104.7	19.7	16.6
1985	01 05	11 41.70	+14 31.2					
1985	01 15	11 44.39	+15 01.1	2.165	2.824	123.1	17.0	16.3
1985	01 25	11 44.65	+15 45.2					
1985	02 04	11 42.41	+16 40.9	1.979	2.831	143.2	12.1	16.0
1985	02 14	11 37.80	+17 43.6					
1985	02 24	11 31.21	+18 46.6	1.880	2.838	162.0	6.2	15.8
1985	03 06	11 23.35	+19 42.4					
1985	03 16	11 15.15	+20 24.3	1.888	2.845	160.6	6.7	15.8
1985	03 26	11 07.55	+20 47.7					
1985	04 05	11 01.41	+20 50.7	2.001	2.854	141.6	12.6	16.1
1985	04 15	10 57.30	+20 34.1					
1985	04 25	10 55.47	+20 00.1	2.196	2.863	122.3	17.3	16.4
1985	05 05	10 55.96	+19 11.3					
1985	05 15	10 58.62	+18 10.6	2.442	2.873	104.9	19.9	16.7
1985	05 25	11 03.22	+17 00.1					
1985	06 04	11 09.49	+15 41.8	2.710	2.884	89.4	20.6	16.9

(3039) 1978 SP2 a,e,i = 2.56, 0.14, 15 Elements MPC 8782

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 26	11 29.10	-08 01.2	2.308	2.627	97.7	21.8	17.9
1985	01 05	11 34.87	-08 42.0					
1985	01 15	11 38.63	-09 07.1	2.023	2.597	115.1	20.1	17.6
1985	01 25	11 40.11	-09 12.9					
1985	02 04	11 39.15	-08 55.8	1.775	2.568	134.9	15.8	17.2
1985	02 14	11 35.76	-08 13.2					
1985	02 24	11 30.18	-07 03.9	1.597	2.537	156.9	8.8	16.7
1985	03 06	11 23.03	-05 30.4					
1985	03 16	11 15.20	-03 39.3	1.519	2.507	171.4	3.4	16.4
1985	03 26	11 07.76	-01 39.8					
1985	04 05	11 01.73	+00 16.7	1.551	2.476	151.3	11.2	16.7
1985	04 15	10 57.85	+02 01.1					
1985	04 25	10 56.53	+03 26.9	1.677	2.446	129.7	18.4	17.0
1985	05 05	10 57.90	+04 30.9					
1985	05 15	11 01.80	+05 12.9	1.863	2.416	111.0	23.0	17.3
1985	05 25	11 08.02	+05 33.8					
1985	06 04	11 16.26	+05 35.5	2.076	2.387	94.9	25.0	17.6

1981 EM a,e,i = 2.47, 0.26, 6 Elements MPC 8284

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 26	11 55.18	+02 58.1	2.174	2.481	96.2	23.2	19.2
1985	01 05	12 00.17	+02 16.7					
1985	01 15	12 02.71	+01 49.8	1.968	2.538	114.4	20.7	19.0
1985	01 25	12 02.55	+01 38.5					
1985	02 04	11 59.58	+01 43.3	1.796	2.592	135.4	15.5	18.7
1985	02 14	11 53.90	+02 03.3					
1985	02 24	11 45.91	+02 36.0	1.697	2.645	159.1	7.7	18.4
1985	03 06	11 36.38	+03 16.8					
1985	03 16	11 26.34	+03 59.7	1.702	2.695	175.8	1.5	18.1
1985	03 26	11 16.88	+04 38.9					
1985	04 05	11 08.96	+05 09.2	1.822	2.743	151.6	10.0	18.7
1985	04 15	11 03.22	+05 27.4					
1985	04 25	10 59.94	+05 32.4	2.036	2.789	129.8	16.1	19.1
1985	05 05	10 59.16	+05 24.0					
1985	05 15	11 00.67	+05 03.4	2.311	2.832	110.8	19.5	19.5
1985	05 25	11 04.23	+04 31.5					
1985	06 04	11 09.56	+03 49.8	2.615	2.872	94.1	20.6	19.9

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.
1984	12 26	11 53.24	+04 00.8	2.593	2.884	97.1	19.8	20.3
1985	01 05	11 57.39	+03 41.4					
1985	01 15	11 59.45	+03 35.6	2.332	2.899	115.8	17.8	20.1
1985	01 25	11 59.19	+03 44.6					
1985	02 04	11 56.50	+04 08.2	2.112	2.911	137.0	13.4	19.8
1985	02 14	11 51.44	+04 45.4					
1985	02 24	11 44.30	+05 33.1	1.969	2.920	160.3	6.5	19.4
1985	03 06	11 35.68	+06 26.8					
1985	03 16	11 26.42	+07 20.3	1.936	2.927	173.6	2.2	19.2
1985	03 26	11 17.46	+08 07.8					
1985	04 05	11 09.69	+08 44.5	2.020	2.931	150.2	9.8	19.6
1985	04 15	11 03.77	+09 07.6					
1985	04 25	11 00.08	+09 15.8	2.199	2.932	128.3	15.6	19.9
1985	05 05	10 58.74	+09 09.5					
1985	05 15	10 59.65	+08 49.9	2.439	2.930	109.1	19.0	20.2
1985	05 25	11 02.63	+08 18.3					
1985	06 04	11 07.45	+07 36.1	2.706	2.925	92.1	20.3	20.5

1982 RH a,e,i = 2.62, 0.14, 13 Elements MPC 7446

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	12 26	11 41.74	-01 32.0	2.494	2.798	-0.88	+2.2	18.7
1985	01 05	11 47.34	-01 46.1					
1985	01 15	11 51.03	-01 44.2	2.202	2.773	-1.01	+2.6	18.4
1985	01 25	11 52.56	-01 23.7					
1985	02 04	11 51.77	-00 43.0	1.949	2.747	-1.17	+3.1	18.0
1985	02 14	11 48.64	+00 18.2					
1985	02 24	11 43.36	+01 38.2	1.771	2.720	-1.30	+3.6	17.6
1985	03 06	11 36.44	+03 12.2					
1985	03 16	11 28.67	+04 52.8	1.699	2.692	-1.35	+3.5	17.1
1985	03 26	11 20.99	+06 31.3					
1985	04 05	11 14.38	+07 59.0	1.740	2.663	-1.29	+3.0	17.6
1985	04 15	11 09.57	+09 09.8					
1985	04 25	11 07.04	+10 00.7	1.876	2.634	-1.17	+2.3	17.9
1985	05 05	11 06.98	+10 30.7					
1985	05 15	11 09.34	+10 41.0	2.072	2.604	-1.03	+1.8	18.2
1985	05 25	11 13.94	+10 33.3					
1985	06 04	11 20.54	+10 09.8	2.295	2.574	-0.93	+1.6	18.4

(3008) 1938 WA a,e,i = 3.16, 0.15, 1 Elements MPC 8667

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 26	11 47.62	+01 08.5	2.504	2.803	97.2	20.4	17.7
1985	01 05	11 53.04	+00 34.9					
1985	01 15	11 56.45	+00 14.6	2.261	2.824	115.2	18.4	17.4
1985	01 25	11 57.63	+00 09.0					
1985	02 04	11 56.49	+00 18.8	2.057	2.846	135.6	14.0	17.2
1985	02 14	11 53.09	+00 43.5					
1985	02 24	11 47.71	+01 21.3	1.926	2.869	158.2	7.4	16.9
1985	03 06	11 40.91	+02 08.3					
1985	03 16	11 33.46	+02 59.3	1.899	2.893	177.9	0.7	16.4
1985	03 26	11 26.21	+03 48.6					
1985	04 05	11 20.00	+04 30.7	1.985	2.919	154.4	8.5	17.0
1985	04 15	11 15.45	+05 01.8					
1985	04 25	11 12.91	+05 19.6	2.167	2.945	132.8	14.5	17.4
1985	05 05	11 12.52	+05 23.5					
1985	05 15	11 14.21	+05 14.1	2.416	2.972	113.8	18.1	17.7
1985	05 25	11 17.83	+04 52.2					
1985	06 04	11 23.15	+04 19.1	2.702	2.999	97.0	19.6	18.0

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.
1984	12 26	11 47.05	+04 19.5	2.333	2.664	98.6	21.4	18.0
1985	01 05	11 53.08	+03 50.6					
1985	01 15	11 56.99	+03 35.6	2.098	2.684	116.4	19.2	17.7
1985	01 25	11 58.54	+03 35.7					
1985	02 04	11 57.62	+03 51.2	1.904	2.706	136.6	14.5	17.4
1985	02 14	11 54.29	+04 20.6					
1985	02 24	11 48.82	+05 01.2	1.783	2.730	159.1	7.4	17.1
1985	03 06	11 41.82	+05 48.2					
1985	03 16	11 34.12	+06 35.5	1.764	2.756	175.1	1.8	16.8
1985	03 26	11 26.66	+07 17.1					
1985	04 05	11 20.34	+07 48.1	1.856	2.784	153.0	9.4	17.3
1985	04 15	11 15.79	+08 05.4					
1985	04 25	11 13.39	+08 07.9	2.041	2.813	131.8	15.5	17.7
1985	05 05	11 13.24	+07 55.9					
1985	05 15	11 15.26	+07 30.5	2.291	2.844	113.1	19.1	18.0
1985	05 25	11 19.25	+06 53.2					
1985	06 04	11 24.97	+06 05.5	2.575	2.875	96.7	20.5	18.3

1982 HB2 a,e,i = 2.19, 0.07, 5 Elements MPC 8271

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	12 26	11 42.04	+08 16.8	1.657	2.086	-1.41	+10.8	18.3
1985	01 05	11 51.25	+07 39.4					
1985	01 15	11 58.05	+07 17.9	1.426	2.072	-1.67	+13.1	17.9
1985	01 25	12 01.99	+07 14.4					
1985	02 04	12 02.66	+07 29.6	1.230	2.060	-2.01	+15.7	17.5
1985	02 14	11 59.87	+08 02.1					
1985	02 24	11 53.70	+08 48.2	1.097	2.050	-2.35	+17.6	17.0
1985	03 06	11 44.83	+09 39.8					
1985	03 16	11 34.52	+10 27.2	1.052	2.041	-2.47	+17.3	16.7
1985	03 26	11 24.36	+11 00.9					
1985	04 05	11 15.94	+11 14.1	1.104	2.034	-2.27	+15.2	17.1
1985	04 15	11 10.36	+11 04.5					
1985	04 25	11 08.13	+10 32.9	1.234	2.029	-1.92	+13.0	17.5
1985	05 05	11 09.29	+09 42.0					
1985	05 15	11 13.54	+08 34.7	1.414	2.026	-1.60	+11.3	17.9
1985	05 25	11 20.48	+07 13.9					
1985	06 04	11 29.68	+05 41.9	1.618	2.025	-1.36	+10.2	18.3

9103 P-L a,e,i = 2.20, 0.17, 3 Elements MPC 8401

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 26	11 56.31	-01 46.0	2.284	2.550	94.1	22.6	18.8
1985	01 05	12 02.25	-02 24.9					
1985	01 15	12 06.04	-02 49.4	2.030	2.563	111.8	20.9	18.6
1985	01 25	12 07.39	-02 57.2					
1985	02 04	12 06.08	-02 46.5	1.806	2.573	132.1	16.5	18.2
1985	02 14	12 02.06	-02 16.5					
1985	02 24	11 55.51	-01 27.9	1.648	2.580	155.2	9.2	17.9
1985	03 06	11 47.00	-00 24.1					
1985	03 16	11 37.44	+00 48.9	1.590	2.584	178.5	0.6	17.3
1985	03 26	11 27.91	+02 03.1					
1985	04 05	11 19.54	+03 10.7	1.645	2.585	154.8	9.5	17.9
1985	04 15	11 13.16	+04 05.4					
1985	04 25	11 09.27	+04 43.7	1.797	2.583	132.2	16.8	18.2
1985	05 05	11 08.05	+05 04.1					
1985	05 15	11 09.39	+05 07.3	2.012	2.578	112.7	21.2	18.6
1985	05 25	11 13.08	+04 54.5					
1985	06 04	11 18.83	+04 27.4	2.258	2.569	96.0	23.1	18.8

1983 WV a,e,i = 3.14, 0.17, 3 Elements MPC 8529

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	12 26	12 00.33	+03 13.5	2.760	3.012	-0.68	+4.6	18.0
1985	01 05	12 05.23	+02 52.4					
1985	01 15	12 08.20	+02 44.3	2.517	3.046	-0.75	+5.1	17.8
1985	01 25	12 09.07	+02 49.9					
1985	02 04	12 07.73	+03 09.1	2.312	3.080	-0.83	+5.7	17.6
1985	02 14	12 04.25	+03 40.9					
1985	02 24	11 58.87	+04 22.7	2.180	3.113	-0.91	+6.2	17.3
1985	03 06	11 52.08	+05 10.5					
1985	03 16	11 44.54	+05 59.4	2.154	3.147	-0.94	+6.2	17.0
1985	03 26	11 37.04	+06 44.0					
1985	04 05	11 30.35	+07 20.0	2.243	3.180	-0.91	+5.9	17.4
1985	04 15	11 25.06	+07 44.2					
1985	04 25	11 21.56	+07 55.3	2.434	3.212	-0.83	+5.3	17.8
1985	05 05	11 20.04	+07 53.0					
1985	05 15	11 20.48	+07 38.3	2.695	3.244	-0.74	+4.7	18.1
1985	05 25	11 22.76	+07 12.1					
1985	06 04	11 26.70	+06 35.9	2.995	3.275	-0.65	+4.2	18.4

(3061) 1982 UB1 a,e,i = 3.09, 0.19, 3 Elements MPC 8790

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 26	12 05.29	+02 52.9	3.489	3.688	93.8	15.4	18.9
1985	01 05	12 08.75	+02 41.7					
1985	01 15	12 10.61	+02 41.5	3.191	3.687	112.9	14.2	18.7
1985	01 25	12 10.72	+02 53.0					
1985	02 04	12 09.01	+03 16.0	2.933	3.684	133.7	11.1	18.4
1985	02 14	12 05.52	+03 49.6					
1985	02 24	12 00.43	+04 31.8	2.752	3.679	156.2	6.2	18.1
1985	03 06	11 54.10	+05 19.5					
1985	03 16	11 47.04	+06 08.8	2.680	3.673	175.6	1.2	17.8
1985	03 26	11 39.86	+06 55.2					
1985	04 05	11 33.20	+07 34.8	2.729	3.665	155.8	6.4	18.1
1985	04 15	11 27.59	+08 04.8					
1985	04 25	11 23.44	+08 23.2	2.885	3.655	133.9	11.4	18.4
1985	05 05	11 20.98	+08 29.5					
1985	05 15	11 20.28	+08 24.0	3.116	3.644	113.9	14.7	18.6
1985	05 25	11 21.30	+08 07.5					
1985	06 04	11 23.95	+07 40.9	3.385	3.631	95.8	16.1	18.8

1982 RU a,e,i = 3.15, 0.20, 15 Elements MPC 8677

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 26	12 05.08	-03 52.0	3.582	3.734	91.2	15.3	19.5
1985 01 05	12 08.69	-04 02.3					
1985 01 15	12 10.75	-04 00.9	3.291	3.746	110.2	14.3	19.3
1985 01 25	12 11.12	-03 46.8					
1985 02 04	12 09.76	-03 19.1	3.035	3.757	131.0	11.4	19.0
1985 02 14	12 06.70	-02 38.1					
1985 02 24	12 02.13	-01 44.9	2.853	3.766	153.6	6.7	18.8
1985 03 06	11 56.38	-00 42.1					
1985 03 16	11 49.94	+00 26.7	2.779	3.773	177.3	0.7	18.3
1985 03 26	11 43.37	+01 36.9					
1985 04 05	11 37.26	+02 43.5	2.827	3.778	159.0	5.4	18.7
1985 04 15	11 32.11	+03 42.7					
1985 04 25	11 28.31	+04 31.3	2.987	3.782	136.7	10.5	19.0
1985 05 05	11 26.09	+05 07.7					
1985 05 15	11 25.51	+05 31.4	3.227	3.784	116.3	13.9	19.3
1985 05 25	11 26.58	+05 42.6					
1985 06 04	11 29.18	+05 42.2	3.511	3.785	97.8	15.4	19.5

1981 QO2 a,e,i = 3.16, 0.10, 1 Elements MPC 8793

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 26	12 06.58	+00 20.0	2.952	3.153	92.5	18.2	18.3
1985 01 05	12 12.00	-00 14.1					
1985 01 15	12 15.74	-00 37.2	2.650	3.133	110.4	17.1	18.0
1985 01 25	12 17.58	-00 48.2					
1985 02 04	12 17.36	-00 46.1	2.382	3.113	130.3	14.0	17.7
1985 02 14	12 15.03	-00 30.8					
1985 02 24	12 10.70	-00 03.2	2.182	3.093	152.4	8.5	17.3
1985 03 06	12 04.68	+00 34.5					
1985 03 16	11 57.54	+01 18.5	2.080	3.073	175.8	1.3	16.8
1985 03 26	11 50.01	+02 04.0					
1985 04 05	11 42.90	+02 45.9	2.093	3.053	160.3	6.3	17.2
1985 04 15	11 36.93	+03 19.6					
1985 04 25	11 32.65	+03 42.0	2.210	3.034	138.0	12.8	17.4
1985 05 05	11 30.40	+03 51.3					
1985 05 15	11 30.24	+03 47.2	2.404	3.015	118.0	17.2	17.7
1985 05 25	11 32.16	+03 30.1					
1985 06 04	11 35.99	+03 00.9	2.641	2.996	100.5	19.4	17.9

(2989) 1976 UF1 a,e,i = 2.24, 0.17, 4 Elements MPC 8463

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 26	12 11.81	+03 02.9	2.369	2.603	92.4	22.2	19.0
1985 01 05	12 18.85	+02 34.0					
1985 01 15	12 23.98	+02 18.9	2.087	2.589	109.7	21.0	18.6
1985 01 25	12 26.85	+02 19.5					
1985 02 04	12 27.17	+02 36.8	1.834	2.573	129.3	17.3	18.3
1985 02 14	12 24.76	+03 10.8					
1985 02 24	12 19.60	+04 00.0	1.641	2.554	151.4	10.7	17.9
1985 03 06	12 12.01	+05 00.4					
1985 03 16	12 02.69	+06 05.4	1.542	2.532	173.3	2.6	17.4
1985 03 26	11 52.66	+07 07.4					
1985 04 05	11 43.12	+07 58.4	1.554	2.508	157.6	8.7	17.7
1985 04 15	11 35.15	+08 33.0					
1985 04 25	11 29.51	+08 48.3	1.665	2.481	135.0	16.6	18.0
1985 05 05	11 26.60	+08 44.1					
1985 05 15	11 26.47	+08 21.9	1.843	2.452	115.3	21.9	18.3
1985 05 25	11 28.95	+07 43.5					
1985 06 04	11 33.80	+06 51.1	2.054	2.420	98.4	24.5	18.5

(3045) 1984 AW a,e,i = 3.13, 0.11, 3 Elements MPC 8784

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 26	12 20.96	+00 33.3	3.309	3.441	89.3	16.6	18.2
1985	01 05	12 25.66	+00 06.7					
1985	01 15	12 28.76	-00 09.4	3.023	3.451	107.6	15.8	18.0
1985	01 25	12 30.08	-00 14.2					
1985	02 04	12 29.48	-00 07.1	2.766	3.459	127.8	13.0	17.7
1985	02 14	12 26.94	+00 11.4					
1985	02 24	12 22.58	+00 40.2	2.574	3.466	149.8	8.3	17.4
1985	03 06	12 16.69	+01 17.2					
1985	03 16	12 09.74	+01 58.7	2.482	3.471	172.9	2.0	17.1
1985	03 26	12 02.34	+02 40.8					
1985	04 05	11 55.20	+03 19.1	2.508	3.476	162.7	4.9	17.3
1985	04 15	11 48.93	+03 50.0					
1985	04 25	11 44.03	+04 10.8	2.646	3.480	140.4	10.6	17.6
1985	05 05	11 40.83	+04 20.1					
1985	05 15	11 39.44	+04 17.7	2.866	3.483	119.9	14.6	17.8
1985	05 25	11 39.88	+04 03.8					
1985	06 04	11 42.04	+03 39.4	3.136	3.484	101.6	16.6	18.1

1955 RZ a,e,i = 2.74, 0.01, 10 Elements MPC 7768

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 26	12 15.70	-10 33.0	2.633	2.748	86.1	20.9	18.3
1985	01 05	12 22.65	-12 02.1					
1985	01 15	12 27.85	-13 23.7	2.361	2.746	102.4	20.5	18.0
1985	01 25	12 31.00	-14 35.7					
1985	02 04	12 31.85	-15 35.6	2.109	2.744	120.5	18.0	17.7
1985	02 14	12 30.25	-16 20.8					
1985	02 24	12 26.17	-16 48.4	1.906	2.742	140.3	13.3	17.4
1985	03 06	12 19.86	-16 55.8					
1985	03 16	12 11.90	-16 42.3	1.784	2.739	159.8	7.2	17.1
1985	03 26	12 03.11	-16 09.3					
1985	04 05	11 54.55	-15 21.1	1.766	2.737	162.5	6.3	17.0
1985	04 15	11 47.17	-14 24.4					
1985	04 25	11 41.72	-13 26.5	1.853	2.735	144.4	12.4	17.3
1985	05 05	11 38.64	-12 34.1					
1985	05 15	11 38.07	-11 51.9	2.024	2.733	125.1	17.6	17.6
1985	05 25	11 39.94	-11 22.8					
1985	06 04	11 44.06	-11 08.0	2.247	2.731	107.6	20.7	17.9

1978 UF a,e,i = 2.61, 0.17, 12 Elements MPC 8907

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	12 26	12 13.50	-08 07.6	2.811	2.939	87.6	19.5	19.5
1985	01 05	12 20.10	-08 46.5					
1985	01 15	12 25.05	-09 13.4	2.505	2.916	104.8	19.0	19.3
1985	01 25	12 28.11	-09 26.1					
1985	02 04	12 29.05	-09 22.1	2.222	2.892	124.1	16.4	18.9
1985	02 14	12 27.73	-08 59.6					
1985	02 24	12 24.16	-08 17.2	1.993	2.865	145.7	11.2	18.5
1985	03 06	12 18.57	-07 15.3					
1985	03 16	12 11.46	-05 56.6	1.854	2.837	169.0	3.8	18.1
1985	03 26	12 03.58	-04 26.4					
1985	04 05	11 55.84	-02 52.4	1.829	2.808	165.2	5.2	18.1
1985	04 15	11 49.13	-01 22.5					
1985	04 25	11 44.12	-00 03.6	1.913	2.777	142.1	12.9	18.4
1985	05 05	11 41.29	+00 59.3					
1985	05 15	11 40.79	+01 44.0	2.080	2.744	121.3	18.4	18.7
1985	05 25	11 42.59	+02 10.3					
1985	06 04	11 46.56	+02 18.9	2.293	2.711	103.2	21.4	19.0

(3006) 1979 SF11 a,e,i = 2.43, 0.19, 3 Elements MPC 8537

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 26	12 26.13	-01 31.3	2.682	2.813	87.3	20.4	19.9
1985 01 05	12 32.46	-02 14.5					
1985 01 15	12 36.96	-02 46.2	2.417	2.832	104.7	19.6	19.6
1985 01 25	12 39.36	-03 05.0					
1985 02 04	12 39.43	-03 09.7	2.173	2.847	124.3	16.6	19.3
1985 02 14	12 37.05	-02 59.7					
1985 02 24	12 32.24	-02 35.3	1.983	2.861	146.4	11.0	19.0
1985 03 06	12 25.30	-01 58.1					
1985 03 16	12 16.80	-01 11.8	1.885	2.871	170.5	3.3	18.6
1985 03 26	12 07.56	-00 21.3					
1985 04 05	11 58.57	+00 27.3	1.902	2.879	164.8	5.2	18.8
1985 04 15	11 50.70	+01 08.6					
1985 04 25	11 44.64	+01 38.7	2.028	2.885	141.6	12.5	19.1
1985 05 05	11 40.79	+01 55.1					
1985 05 15	11 39.27	+01 57.3	2.235	2.887	120.8	17.5	19.5
1985 05 25	11 40.03	+01 45.7					
1985 06 04	11 42.88	+01 21.2	2.489	2.887	102.7	20.0	19.7

1977 RG a,e,i = 2.79, 0.11, 9 Elements MPC 8391

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984 12 26	12 09.86	-01 59.9	2.549	2.746	-0.89	+3.2	19.2
1985 01 05	12 17.62	-02 27.4					
1985 01 15	12 23.71	-02 40.9	2.257	2.724	-1.02	+3.7	18.9
1985 01 25	12 27.85	-02 38.3					
1985 02 04	12 29.81	-02 17.8	1.993	2.702	-1.17	+4.4	18.5
1985 02 14	12 29.42	-01 38.5					
1985 02 24	12 26.65	-00 40.8	1.787	2.680	-1.33	+5.1	18.2
1985 03 06	12 21.74	+00 32.8					
1985 03 16	12 15.21	+01 56.9	1.671	2.659	-1.43	+5.5	17.7
1985 03 26	12 07.83	+03 24.2					
1985 04 05	12 00.58	+04 46.2	1.666	2.639	-1.42	+5.2	17.8
1985 04 15	11 54.37	+05 55.5					
1985 04 25	11 49.94	+06 46.9	1.764	2.619	-1.30	+4.5	18.1
1985 05 05	11 47.74	+07 17.9					
1985 05 15	11 47.94	+07 28.7	1.937	2.600	-1.16	+3.7	18.5
1985 05 25	11 50.48	+07 20.6					
1985 06 04	11 55.19	+06 55.7	2.154	2.582	-1.03	+3.3	18.7

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

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 12 26	12 26.74	+08 49.8	3.096	3.269	91.3	17.5	17.9
1985 01 05	12 32.52	+08 57.7					
1985 01 15	12 36.63	+09 19.2	2.828	3.285	109.2	16.4	17.7
1985 01 25	12 38.86	+09 54.4					
1985 02 04	12 39.06	+10 42.6	2.594	3.300	128.6	13.5	17.5
1985 02 14	12 37.18	+11 41.5					
1985 02 24	12 33.27	+12 47.8	2.427	3.314	148.9	8.9	17.2
1985 03 06	12 27.63	+13 56.1					
1985 03 16	12 20.74	+15 00.5	2.360	3.327	163.8	4.8	17.0
1985 03 26	12 13.24	+15 55.1					
1985 04 05	12 05.90	+16 35.1	2.407	3.338	154.7	7.4	17.2
1985 04 15	11 59.39	+16 57.6					
1985 04 25	11 54.26	+17 02.0	2.557	3.349	135.4	12.2	17.4
1985 05 05	11 50.89	+16 49.2					
1985 05 15	11 49.41	+16 21.1	2.783	3.358	116.5	15.6	17.7
1985 05 25	11 49.82	+15 40.0					
1985 06 04	11 52.02	+14 48.2	3.053	3.366	99.1	17.3	18.0

1971 SN1 a,e,i = 3.10, 0.21, 16 Elements MPC 8785

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 01 15	12 47.44	+02 37.9	3.339	3.707	104.3	14.9	18.8
1985 01 25	12 48.42	+02 29.3					
1985 02 04	12 47.57	+02 30.4	3.068	3.715	124.4	12.6	18.6
1985 02 14	12 44.84	+02 40.5					
1985 02 24	12 40.28	+02 58.3	2.859	3.723	146.2	8.5	18.3
1985 03 06	12 34.14	+03 21.7					
1985 03 16	12 26.81	+03 47.7	2.748	3.728	168.5	3.1	18.0
1985 03 26	12 18.84	+04 12.9					
1985 04 05	12 10.87	+04 33.8	2.756	3.731	165.1	4.0	18.1
1985 04 15	12 03.53	+04 47.6					
1985 04 25	11 57.34	+04 52.3	2.880	3.733	143.0	9.3	18.4
1985 05 05	11 52.69	+04 46.9					
1985 05 15	11 49.74	+04 31.2	3.096	3.733	122.2	13.3	18.6
1985 05 25	11 48.57	+04 05.8					
1985 06 04	11 49.11	+03 31.4	3.366	3.732	103.3	15.3	18.8
1985 06 14	11 51.24	+02 48.9					
1985 06 24	11 54.80	+01 59.2	3.657	3.728	86.1	15.8	19.0

1953 VN2 a,e,i = 2.41, 0.14, 7 Elements MPC 8390

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 01 15	12 44.99	+04 05.8	2.288	2.720	105.4	20.4	18.4
1985 01 25	12 48.53	+04 13.0					
1985 02 04	12 49.68	+04 35.6	2.049	2.731	124.5	17.3	18.1
1985 02 14	12 48.28	+05 12.8					
1985 02 24	12 44.26	+06 02.5	1.864	2.739	145.8	11.7	17.8
1985 03 06	12 37.87	+07 00.5					
1985 03 16	12 29.63	+08 00.7	1.768	2.746	166.5	4.8	17.5
1985 03 26	12 20.36	+08 56.1					
1985 04 05	12 11.09	+09 39.9	1.784	2.750	161.2	6.7	17.6
1985 04 15	12 02.81	+10 07.3					
1985 04 25	11 56.29	+10 16.2	1.904	2.752	139.9	13.6	17.9
1985 05 05	11 52.03	+10 06.4					
1985 05 15	11 50.19	+09 39.7	2.103	2.751	119.9	18.6	18.2
1985 05 25	11 50.73	+08 58.3					
1985 06 04	11 53.47	+08 04.5	2.347	2.749	102.4	21.1	18.5
1985 06 14	11 58.16	+07 00.4					
1985 06 24	12 04.56	+05 47.9	2.606	2.744	86.8	21.7	18.8

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

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 01 15	12 45.22	-03 51.5	3.036	3.387	102.4	16.5	18.8
1985 01 25	12 48.03	-04 02.7					
1985 02 04	12 49.00	-04 01.8	2.751	3.376	121.8	14.4	18.6
1985 02 14	12 48.04	-03 48.5					
1985 02 24	12 45.13	-03 22.8	2.521	3.365	143.1	10.2	18.3
1985 03 06	12 40.46	-02 46.0					
1985 03 16	12 34.38	-02 00.8	2.379	3.353	166.1	4.1	17.9
1985 03 26	12 27.42	-01 10.8					
1985 04 05	12 20.26	-00 20.7	2.351	3.341	170.0	3.0	17.8
1985 04 15	12 13.60	+00 24.8					
1985 04 25	12 08.05	+01 01.9	2.438	3.328	147.1	9.4	18.2
1985 05 05	12 04.06	+01 27.6					
1985 05 15	12 01.87	+01 40.6	2.616	3.314	126.1	14.3	18.4
1985 05 25	12 01.59	+01 40.7					
1985 06 04	12 03.17	+01 28.4	2.853	3.300	107.3	17.1	18.7
1985 06 14	12 06.47	+01 04.6					
1985 06 24	12 11.35	+00 30.7	3.116	3.285	90.5	18.0	18.9

1981 DD a,e,i = 2.35, 0.13, 6 Elements MPC 8143

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 01 15	12 41.54	-10 45.5	2.114	2.489	100.5	22.9	18.6
1985 01 25	12 47.32	-11 32.2					
1985 02 04	12 50.88	-12 04.2	1.842	2.465	118.1	20.7	18.3
1985 02 14	12 51.92	-12 18.6					
1985 02 24	12 50.22	-12 12.9	1.611	2.439	138.1	15.7	17.8
1985 03 06	12 45.80	-11 44.9					
1985 03 16	12 39.01	-10 54.7	1.451	2.413	160.6	7.9	17.4
1985 03 26	12 30.56	-09 44.8					
1985 04 05	12 21.57	-08 21.9	1.391	2.385	171.5	3.5	17.1
1985 04 15	12 13.23	-06 54.9					
1985 04 25	12 06.61	-05 33.5	1.436	2.357	149.2	12.6	17.4
1985 05 05	12 02.48	-04 25.7					
1985 05 15	12 01.15	-03 36.3	1.566	2.329	128.0	20.0	17.8
1985 05 25	12 02.66	-03 07.2					
1985 06 04	12 06.84	-02 58.3	1.748	2.300	109.9	24.5	18.1
1985 06 14	12 13.39	-03 07.8					
1985 06 24	12 22.02	-03 33.8	1.953	2.271	94.5	26.5	18.3

1974 QU1 a,e,i = 2.64, 0.24, 2 Elements MPC 8533

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 01 15	12 53.58	-06 46.3	2.686	3.007	99.3	18.8	19.0
1985 01 25	12 56.70	-07 05.6					
1985 02 04	12 57.71	-07 11.5	2.444	3.041	118.6	16.5	18.7
1985 02 14	12 56.49	-07 03.0					
1985 02 24	12 53.02	-06 39.9	2.248	3.073	140.1	11.9	18.5
1985 03 06	12 47.49	-06 03.0					
1985 03 16	12 40.34	-05 14.7	2.136	3.103	163.5	5.2	18.2
1985 03 26	12 32.21	-04 18.9					
1985 04 05	12 23.90	-03 20.8	2.136	3.130	172.1	2.5	18.1
1985 04 15	12 16.22	-02 26.0					
1985 04 25	12 09.86	-01 39.3	2.251	3.154	148.7	9.5	18.5
1985 05 05	12 05.28	-01 04.1					
1985 05 15	12 02.70	-00 42.1	2.460	3.176	127.3	14.7	18.8
1985 05 25	12 02.18	-00 33.8					
1985 06 04	12 03.63	-00 38.7	2.729	3.196	108.2	17.5	19.1
1985 06 14	12 06.85	-00 55.5					
1985 06 24	12 11.66	-01 23.0	3.025	3.213	91.3	18.4	19.4

1976 SZ5 a,e,i = 3.13, 0.16, 2 Elements MPC 9069

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985 01 15	12 50.03	-04 28.0	3.250	3.572	101.1	15.7	19.4
1985 01 25	12 52.59	-04 38.7					
1985 02 04	12 53.39	-04 38.0	2.953	3.557	120.6	13.8	19.1
1985 02 14	12 52.35	-04 25.5					
1985 02 24	12 49.45	-04 01.2	2.709	3.540	141.9	9.9	18.8
1985 03 06	12 44.84	-03 26.3					
1985 03 16	12 38.85	-02 43.0	2.553	3.523	164.8	4.2	18.5
1985 03 26	12 31.95	-01 54.5					
1985 04 05	12 24.79	-01 05.1	2.512	3.504	171.3	2.5	18.3
1985 04 15	12 18.02	-00 19.3					
1985 04 25	12 12.21	+00 19.2	2.587	3.484	148.4	8.7	18.7
1985 05 05	12 07.85	+00 47.5					
1985 05 15	12 05.18	+01 03.9	2.757	3.463	127.1	13.5	18.9
1985 05 25	12 04.35	+01 07.9					
1985 06 04	12 05.32	+00 59.8	2.989	3.440	108.0	16.3	19.1
1985 06 14	12 08.00	+00 40.6					
1985 06 24	12 12.24	+00 11.1	3.248	3.417	90.8	17.3	19.3

1952 SG a,e,i = 2.26, 0.18, 5 Elements MPC 8906

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	01 15	12 51.30	-01 07.3	2.253	2.639	102.0	21.4	19.9
1985	01 25	12 56.11	-01 12.2					
1985	02 04	12 58.66	-01 01.0	1.982	2.625	120.6	18.9	19.5
1985	02 14	12 58.70	-00 32.8					
1985	02 24	12 56.05	+00 12.2	1.758	2.608	141.7	13.6	19.1
1985	03 06	12 50.78	+01 12.0					
1985	03 16	12 43.25	+02 22.1	1.616	2.588	164.5	5.9	18.7
1985	03 26	12 34.17	+03 35.9					
1985	04 05	12 24.57	+04 45.1	1.580	2.565	167.2	5.0	18.6
1985	04 15	12 15.57	+05 42.1					
1985	04 25	12 08.15	+06 21.6	1.652	2.539	144.5	13.3	18.9
1985	05 05	12 03.03	+06 40.7					
1985	05 15	12 00.50	+06 39.6	1.806	2.511	123.6	19.6	19.2
1985	05 25	12 00.63	+06 19.7					
1985	06 04	12 03.28	+05 43.2	2.008	2.481	105.6	23.2	19.5
1985	06 14	12 08.18	+04 52.7					
1985	06 24	12 15.06	+03 50.1	2.227	2.448	90.0	24.5	19.7

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

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	01 15	12 53.26	-04 44.6	3.374	3.678	100.2	15.3	19.7
1985	01 25	12 55.59	-04 53.1					
1985	02 04	12 56.21	-04 50.6	3.085	3.676	119.8	13.5	19.5
1985	02 14	12 55.02	-04 36.5					
1985	02 24	12 52.04	-04 11.1	2.848	3.672	141.2	9.7	19.2
1985	03 06	12 47.41	-03 35.5					
1985	03 16	12 41.45	-02 51.9	2.700	3.667	164.2	4.2	18.9
1985	03 26	12 34.64	-02 03.4					
1985	04 05	12 27.57	-01 14.1	2.667	3.660	172.0	2.2	18.7
1985	04 15	12 20.85	-00 28.1					
1985	04 25	12 15.05	+00 10.8	2.751	3.651	149.1	8.1	19.1
1985	05 05	12 10.60	+00 40.0					
1985	05 15	12 07.76	+00 57.8	2.933	3.641	127.8	12.7	19.3
1985	05 25	12 06.64	+01 03.9					
1985	06 04	12 07.26	+00 58.4	3.179	3.629	108.4	15.4	19.6
1985	06 14	12 09.50	+00 42.1					
1985	06 24	12 13.24	+00 16.1	3.453	3.616	91.0	16.3	19.8

1983 VE a,e,i = 2.63, 0.28, 4 Elements MPC 8464

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1985	01 15	12 57.67	-09 39.6	2.590	2.885	97.3	19.8	18.8
1985	01 25	13 01.23	-10 07.5					
1985	02 04	13 02.60	-10 21.6	2.363	2.934	116.2	17.5	18.6
1985	02 14	13 01.64	-10 20.6					
1985	02 24	12 58.34	-10 03.8	2.176	2.981	137.4	13.0	18.4
1985	03 06	12 52.86	-09 31.2					
1985	03 16	12 45.67	-08 44.5	2.069	3.026	160.6	6.3	18.1
1985	03 26	12 37.40	-07 47.3					
1985	04 05	12 28.91	-06 44.6	2.071	3.068	173.7	2.1	17.9
1985	04 15	12 21.04	-05 42.6					
1985	04 25	12 14.49	-04 46.6	2.189	3.107	150.8	9.1	18.4
1985	05 05	12 09.76	-04 01.1					
1985	05 15	12 07.08	-03 28.5	2.404	3.143	129.3	14.4	18.7
1985	05 25	12 06.49	-03 09.8					
1985	06 04	12 07.88	-03 04.8	2.681	3.177	110.2	17.4	19.1
1985	06 14	12 11.06	-03 12.4					
1985	06 24	12 15.85	-03 31.4	2.989	3.208	93.1	18.4	19.3