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

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Smithsonian Astrophysical Observatory
Cambridge, MA 02138, U.S.A.
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ERRATA.

MPC	Line	
16775	-9 to -8	The June 19 and 20 observations of comet 1990g should be deleted.
16802	14	For Michaud (3, S) read Michaud (2, S)
16830	-7 to -4	For note 3 read 4
16855	-10	For H 13.6 read H 13.60

* * * * *

CORRECTED OBSERVATIONS.

The following observations correct those previously published.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Mag.	N	Obs.
1949 SA1	1949 10	15.90657	01 34 48.49	+03 59 44.6	MPC 455			020
1962 VB	1962 11	01.14786	01 00 42.69	+05 53 10.7	MPC 5027		1	760
1989 UM	1989 11	04.62326	01 45 37.53	+14 16 44.8	MPC15510		2	877
1989 US2	1989 11	04.62326	01 46 59.83	+12 57 52.1	MPC15510		2	877
1989 VC2 *	1989 11	02.61285	01 49 22.92	+13 55 52.4	MPC16771			877
1989 VC2	1989 11	02.63021	01 49 22.20	+13 55 50.2	MPC16771			877
1990 LA	1987 10	29.45053	00 20 29.67	-04 27 14.7	MPC16798			413
1990 MB	1990 07	29.20771	16 36 15.23	+07 12 13.0	MPC16827	17.4R		688
1990 MB	1990 07	30.15608	16 36 46.98	+07 14 50.8	MPC16827	16.9R		688
38	1967 07	13.01683	21 33 14.76	-11 40 12.3	MPC 3327		3	020
38	1967 07	13.02514	21 33 14.46	-11 40 01.4	MPC 3327		3	020
160	1950 09	07.97164	22 00 30.92	-15 55 53.1	MPC 682		4	006
305	1960 11	12.18	03 10.6	+15 10	MPC 2134	13.2		760
306	1950 09	07.97164	21 54 53.70	-16 03 26.3	MPC 682		4	006
306	1964 05	05.68877	15 34 14.08	-05 47 06.2	MPC 2535			334
317	1967 07	13.01683	21 25 12.10	-13 44 14.5	MPC 3333			020
317	1967 07	13.02514	21 25 11.96	-13 44 14.3	MPC 3333			020
317	1977 06	09.82014	16 26 07.39	-18 32 12.8	MPC 4422	13.5		076
318	1954 08	02.60781	21 05 04	-09 16.1	MPC 1157			377
324	1960 07	19.89931	19 58 56.20	-31 56 09.1	MPC 2071	10.3	3	076
326	1974 11	10.85625	00 31 30.30	-03 57 44.1	MPC 3881			029

328	1976 08 19.81736	20 27 39.68	-35 12 25.7	MPC 4137	14.5		076
334	1948 11 27.02	06 07.7	+19 09	MPC 192	12.3		020
335	1969 04 10.90878	14 06 30.0	-04 41 54	MPC 3405			048
337	1972 06 07.85347	18 05 09.33	-35 49 26.0	MPC 3471	13.0		076
343	1952 12 13.61979	05 18 39	+27 40.1	MPC 924			377
346	1957 09 23.87847	00 07.3	-14 54	MPC 1697			990
349	1958 01 16.9498	04 12 58.42	+29 53 27.8	MPC 3045		5	022
349	1958 01 17.8861	04 12 51.66	+29 52 13.4	MPC 3045		5	022
349	1969 05 12.85662	10 32 12.92	+15 44 55.3	MPC 3432			020
349	1969 05 12.85940	10 32 12.98	+15 44 53.4	MPC 3432			020
351	1954 05 30.54	16 00.2	-12 05	MPC 1481	12.5		388
352	1973 12 26.85489	04 17 12.82	+19 54 13.3	MPC 4871			020
357	1968 08 14.84444	21 16 58.71	-15 56 20.2	MPC 2936	13.8		076
358	1939 08 12.00	20 49.1	-14 15	RI 2015			012
358	1964 11 08.81333	00 24 23.35	-00 03 32.4	MPC 2599			095
363	1972 09 03.11840	20 40 31.73	-27 20 47.5	MPC 3584			839
366	1968 10 17.13406	03 00 55.28	+30 01 03.2	MPC 2978			012
366	1977 04 21.85972	14 15 01.85	-26 19 17.8	MPC 4422	14.0		076
369	1961 02 24.1368	12 25 05.85	+17 04 21.7	MPC 3406			043
369	1971 07 26.22247	21 19 57.62	-28 29 50.8	MPC 3309		6	822
376	1948 08 05.90966	20 12 42.66	-18 58 34.2	MPC 216			983
376	1948 08 05.91694	20 12 42.24	-18 58 33.6	MPC 216			983
379	1961 02 12.93274	08 31 57.68	+17 19 19.9	MPC 2060			020
384	1938 05 02.97485	14 59 18.06	-16 33 48.0	MPC 3212			020
384	1938 05 03.00532	14 59 16.12	-16 33 42.7	MPC 3212			020
385	1949 09 28.0	00 29.5	+11 55	MPC 452			020
387	1955 11 19.92431	03 46.1	-06 14	MPC 1382			990
388	1963 06 17.59740	17 20 47.24	-33 02 48.8	MPC 2200			420
389	1954 06 28.96111	18 42 41.37	-24 01 44.6	MPC 1145			990
392	1943 10 22.9458	03 30.2	+13 20	RI 2514	11.2		053
393	1977 11 10.82787	00 06 01.48	+06 00 18.5	MPC 6908			020
393	1977 11 10.82995	00 06 01.51	+06 00 17.6	MPC 6908			020
396	1961 09 15.86838	22 06 23.33	-07 17 31.3	MPC 2208			008
3811	1989 07 21.39811	15 20 04.03	-31 48 19.1	MPC14991			413

Note 1: 1962 VB = (612). 2: time originally in error. 3: date changed by -1 day. 4: date changed by -2 days. 5: observations originally interchanged. 6: date originally given as 1971 07 26.11147.

* * * * *

DELETED OBSERVATIONS.

The following observations are to be deleted.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Obs.
1949 QP2 *	1949 08 16.924	21 26.6	-26 02	MPC16771		119
1977 HF1 *	1977 04 24.39271	14 18 33.31	-13 28 36.3	MPC10903		675
1977 HF1	1977 04 25.39548	14 17 48.77	-13 24 54.4	MPC10903		675
1987 RM1	1990 07 19.23130	20 14 20.68	-16 44 31.3	MPC16830		801
304	1963 07 15.30040	20 33 17.2	+02 20 14	MPC 2197		669
308	1964 03 18.52	12 49.7	-04 43	MPC 2608		388
309	1969 02 18.06701	11 22 31.07	+05 39 05.3	MPC 3431		020
309	1969 02 18.09782	11 22 30.09	+05 39 05.8	MPC 3431		020
311	1952 12 15.9479	03 59 34.58	+19 09 29.5	MPC 879		990
311	1975 07 30.90708	17 52 18.95	-24 59 52.9	MPC 4870		020
311	1975 07 30.92058	17 52 18.75	-24 59 52.8	MPC 4870		020
313	1948 03 14.84576	10 04 57.18	+06 51 15.8	MPC 169		021
313	1957 09 23.82369	23 19.1	-02 33	MPC 1697		990
313	1957 09 24.80903	23 18.1	-02 43	MPC 1697		990

314		1967	03	17.89378	11	39	05.84	+03	32	53.3	MPC 3333	020
314		1967	03	17.90832	11	39	05.23	+03	32	55.6	MPC 3333	020
314		1967	04	05.89199	11	27	20.23	+05	29	37.4	MPC 3333	020
314		1967	04	05.90722	11	27	18.96	+05	29	48.3	MPC 3333	020
314		1969	08	08.92700	20	27	54.17	-06	03	40.7	MPC 3431	020
314		1969	08	08.93600	20	27	53.83	-06	03	38.5	MPC 3431	020
314		1969	08	12.93478	20	25	17.66	-06	33	08.7	MPC 3431	020
314		1969	08	12.94378	20	25	17.16	-06	33	00.8	MPC 3431	020
315		1957	04	02.91463	10	39	47.24	+09	01	45.6	MPC 1821	020
315		1967	02	08.04575	10	54	10.94	+06	27	07.6	MPC 3333	020
315		1967	02	08.04575	10	53	15.06	+06	31	23.7	MPC 3333	020
315		1967	02	08.06307	10	54	09.84	+06	27	16.0	MPC 3333	020
315		1967	02	08.06307	10	53	13.93	+06	31	29.3	MPC 3333	020
316		1968	03	29.97297	13	49	55.63	-07	54	36.8	MPC 3431	020
316		1968	03	29.98336	13	49	55.17	-07	54	42.2	MPC 3431	020
318		1971	07	29.87817	20	00	40.50	-10	37	55.5	MPC 5112	073
318		1971	07	29.88995	20	00	39.83	-10	37	55.6	MPC 5112	073
324		1965	12	26.72098	05	51	13.91	+40	19	17.5	MPC 2529	021
324		1965	12	29.81834	05	48	38.36	+40	04	41.7	MPC 2529	021
324		1978	10	08.83681	02	57	34.4	+37	29	01.7	MPC 4760	508
327		1972	10	02.78499	22	35	20.55	-09	39	52.1	MPC 5161	073
327		1972	10	02.79538	22	35	20.55	-09	39	52.5	MPC 5161	073
328		1974	03	21.81803	10	55	10.56	+08	54	15.0	MPC 5161	073
328		1974	03	21.84145	10	55	10.03	+08	54	13.6	MPC 5161	073
331		1971	05	12.93588	14	13	17.69	-16	25	09.8	MPC 6370	020
331		1971	05	12.94211	14	13	17.33	-16	25	06.7	MPC 6370	020
331		1971	05	14.98086	14	11	28.16	-16	18	47.7	MPC 6370	020
331		1971	05	14.98813	14	11	27.84	-16	18	47.7	MPC 6370	020
332		1972	08	21.95237	22	13	20.75	-15	35	04.4	MPC 5732	020
332		1972	08	21.95722	22	13	20.24	-15	35	08.1	MPC 5732	020
333		1942	10	05.93570	00	57	17.97	+08	26	02.6	RI 2419	028
335		1941	01	09.13056	08	47	37.84	+14	33	55.5	RI 2267	028
337		1960	02	25.81458	10	35	32.03	+14	13	26.7	MPC 2079	075
341		1950	04	14.00127	13	12	42.21	-06	20	19.5	MPC 549	020
343		1948	10	03.0	01	09	.0	+04	07		MPC 199	020
343		1948	10	09.94627	00	52	44.16	+02	37	09.0	MPC 2341	047
343		1948	10	27.81079	00	41	14.65	+02	02	51.3	MPC 258	066
343		1953	01	10.46597	04	52	51.04	+27	12	31.9	MPC 2204	388
343		1961	03	16.91050	10	56	26.06	+11	18	28.8	MPC 2061	020
343		1961	03	16.93821	10	56	24.28	+11	18	47.1	MPC 2061	020
343		1969	05	12.91336	13	31	31.33	-09	11	14.5	MPC 3432	020
343		1969	05	12.92859	13	31	30.51	-09	11	04.3	MPC 3432	020
346		1962	11	22.61468	02	22	54.18	+03	23	25.3	MPC 2317	334
347		1943	12	16.82523	06	35	21.13	+25	20	22.5	RI 2546	028
347		1943	12	20.97118	06	30	33.50	+25	47	25.4	RI 2546	028
347		1957	03	01.50000	10	01	11.58	+31	51	16.1	MPC 3061	388
347		1972	11	30.68642	02	12	48.56	+01	27	30.7	MPC 5162	073
347		1972	11	30.69612	02	12	48.32	+01	27	30.4	MPC 5162	073
352		1972	06	07.89226	15	40	08.11	-19	53	49.3	MPC 5733	020
352		1972	06	07.90334	15	40	07.25	-19	53	51.4	MPC 5733	020
353		1966	04	14.95291	13	11	25.95	+01	18	45.2	MPC 3334	020
353		1966	04	18.96587	13	08	12.66	+01	35	18.1	MPC 3334	020
353		1966	04	18.98179	13	08	11.43	+01	35	21.0	MPC 3334	020
353		1966	04	21.91924	13	05	47.55	+01	44	07.8	MPC 3334	020
353		1968	08	12.84656	20	58	44.45	-21	56	25.7	MPC 3432	020
353		1968	08	12.85903	20	58	42.88	-21	56	21.4	MPC 3432	020
353		1968	08	30.86045	20	42	50.41	-23	23	58.9	MPC 3432	020
353		1968	08	30.87430	20	42	50.08	-23	23	50.4	MPC 3432	020
354		1961	09	13.92266	00	34	29.43	-14	57	25.0	MPC 2539	073

354	1961 09 13.93799	00 34 29.06	-14 57 08.0	MPC 2539		073
354	1961 09 18.90824	00 29 41.41	-15 47 41.7	MPC 2540		073
354	1961 09 18.92347	00 29 50.73	-15 47 34.8	MPC 2540		073
354	1969 07 15.89905	16 38 24.68	-00 44 50.2	MPC 3405		048
354	1969 07 15.91730	16 38 25.65	-00 44 50.2	MPC 3405		048
354	1973 05 08.97275	12 09 07.83	+21 24 52.4	MPC 4871		020
354	1973 05 08.97449	12 09 07.87	+21 24 53.7	MPC 4871		020
357	1968 08 09.84660	21 20 10.17	-15 09 44.9	MPC 3433		020
358	1961 02 08.47	08 20.0	+15 45	MPC 2548		388
358	1961 02 12.90331	08 18 09.50	+16 00 13.5	MPC 2060		020
361	1953 10 07.86042	02 14 07.28	+17 27 38.3	MPC 1018		990
361	1956 03 13.63681	12 48 35.78	-01 28 32.4	MPC 2586		388
364	1944 08 26.01181	23 26 48.45	-13 43 49.3	RI 2560		028
364	1966 04 14.95291	13 22 55.45	+02 02 52.9	MPC 3334		020
364	1966 04 15.91346	13 22 53.45	+02 09 41.5	MPC 3334		020
369	1975 07 30.90708	17 50 17.45	-26 08 49.9	MPC 4872		020
369	1975 07 30.92058	17 50 17.28	-26 08 49.8	MPC 4872		020
371	1956 08 03.50591	19 22 35.54	-19 08 37.0	MPC 2645		388
372	1961 11 02.85685	03 32 16.18	+58 26 30.0	MPC 2541		073
372	1961 11 09.74498	03 27 07.28	+58 11 46.0	MPC 2541		073
374	1945 12 04.74471	06 16 13	+14 03.5	MPC 333		377
377	1944 04 11.84549	11 54 58.15	-03 42 24.3	RI 2548		028
377	1967 07 08.88129	17 24 54.98	-14 24 04.2	MPC 3334		020
377	1967 07 08.89376	17 24 54.21	-14 23 58.0	MPC 3334		020
381	1941 05 27.88356	14 25 33.67	+04 42 38.3	RI 2296		028
384	1940 12 17.72691	03 50 59.80	+23 53 13.0	RI 2258		028
384	1940 12 17.78472	03 50 56.22	+23 53 15.1	RI 2258		028
384	1968 04 03.07110	13 53 21.88	-07 48 45.3	MPC 3433		020
384	1968 04 03.08565	13 53 20.58	-07 48 36.9	MPC 3433		020
386	1965 07 29.29172	20 42 16	+01 45.2	MPC 2534		669
389	1955 09 11.66397	01 17 32.61	+20 53 37.3	MPC 2318		337
390	1956 08 04.97358	20 56 53.67	-14 57 03.5	MPC 1755		020
392	1957 07 24.92292	21 23.4	+07 12	MPC 1697		990
392	1957 07 26.90903	21 21.9	+07 13	MPC 1697		990
393	1968 11 17.48103	02 26 38	+09 45.8	MPC 3107		385
393	1968 11 17.54341	02 26 36	+09 45.8	MPC 3107		385
393	1968 11 18.46597	02 25 54	+09 46.6	MPC 3108		390
393	1968 11 18.55122	02 25 52	+09 46.7	MPC 3108		390
395	1972 08 21.92051	21 54 11.94	-07 17 11.9	MPC 5733		020
395	1972 08 21.92675	21 54 11.21	-07 17 08.7	MPC 5733		020
396	1942 04 11.91714	13 49 36.30	-14 05 39.3	MPC 3212		020
396	1943 09 23.91954	23 23 54.22	+00 34 49.8	MPC 3233		020
396	1943 09 23.94931	23 23 52.87	+00 34 46.5	MPC 3233		020
396	1955 02 15.51319	09 44 27.61	+09 45 16.3	MPC 2611		388
396	1969 04 18.98789	11 36 54.70	-01 14 41.3	MPC 3434		020
396	1969 04 18.99204	11 36 53.55	-01 14 40.7	MPC 3434		020
396	1971 12 23.76408	03 28 10.25	+19 14 50.8	MPC 6372		020
396	1971 12 23.78970	03 28 09.34	+19 14 48.3	MPC 6372		020
398	1956 08 07.12456	18 48 14.80	-20 20 31.8	MPC 1548		804

* * * * *

IDENTIFICATION CHANGES.

Continuation to MPC 16770-16771.

Object	Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
A909 BN	* 1909 01 27.02880	09 43 22.09	+22 04 37.2	336			024
A916 YF	* 1916 12 19.95138	04 23 46.19	+14 54 54.1	335			024

A920	LB	*	1920	06	11.98975	16	58	32.63	-16	40	58.1	368		024
A921	SC	*	1921	09	30.93424	00	01	35.40	-01	57	50.6	315		024
A921	UF	*	1921	10	31.90680	23	46	05.82	-04	06	50.2	315		024
A921	UG	*	1921	10	31.90680	23	46	23.61	-04	05	38.5	315		024
1932	WP	*	1932	11	30.07485	05	03	13.86	+15	13	01.7	870		012
1933	UC2	*	1933	10	20.07949	03	00	18.47	+13	32	14.0	274		012
1933	XJ	*	1933	12	08.88583	01	05	53.53	+03	41	09.5	392		012
1936	HO	*	1936	04	25.89610	12	36	33.61	-14	34	03.0	328		020
1936	HO		1936	04	25.93318	12	36	32.17	-14	33	57.7	328		020
1937	WQ	*	1937	11	25.97379	05	55	47.06	+21	20	54.8	379		020
1937	WQ		1937	11	26.01395	05	55	45.48	+21	20	48.4	379		020
1939	UU	*	1939	10	21.97	01	14.0		+01	34		334		012
1940	YS	*	1940	12	22.81	03	38.5		+19	13		394		012
1942	HM	*	1942	04	22.837	14	49.7		-18	26		378	13.4	078
1946	UT	*	1946	10	18.83363	23	52	53.67	+07	59	48.1	382		012
1947	OH	*	1947	07	21.816	20	53.6		-25	29		348	13.0	078
1947	XJ	*	1947	12	03.73462	04	32	16.0	+16	44	23	347		119
1948	EK1	*	1948	03	03.89237	14	34	10.54	-03	44	19.0	339		057
1948	FD	*	1948	03	30.91167	12	58	11.3	+02	38	02	363	12.5	085
1948	TO2	*	1948	10	07.87183	23	39	24.37	+15	30	00.3	390		012
1948	UN	*	1948	10	28.98333	04	04.3		+18	01		383	12.3	094
1949	FS1	*	1949	03	29.81	10	39.1		+18	01		357	12.0	085
1949	HS1	*	1949	04	18.84324	14	09	34	-16	06.1		352	12.5	078
1949	HS1		1949	04	25.57707	14	02	30	-15	25.3		352	12.8	388
1950	DO1	*	1950	02	18.92236	08	55	08.83	+15	39	09.6	315		012
1950	LM1	*	1950	06	07.82373	17	20	22.30	-37	23	56.5	361	14.0	078
1952	HM4	*	1952	04	22.8454	13	08.7		-10	37		309	12.8	094
1952	TM	*	1952	10	14.98441	23	27	57.03	-17	23	11.7	304		983
1954	BH	*	1954	01	31.58194	08	28	29.69	+18	00	18.0	376		388
1954	BH		1954	02	03.87500	08	24	59.90	+18	09	24.3	376		990
1954	BJ	*	1954	01	31.58194	08	28	54.83	+18	11	13.8	142		388
1954	FE	*	1954	03	28.95003	12	35	13.29	-12	33	00.2	399		057
1954	SS1	*	1954	09	23.98958	01	02	55.06	+20	31	52.8	385		119
1955	DY	*	1955	02	24.36	11	40.9		+11	57		362	15.7	760
1955	HZ	*	1955	04	26.93785	15	30	38.18	-29	15	50.4	312	11.5	076
1956	ER1	*	1956	03	14.00052	13	10	32.83	+02	52	43.1	364		012
1959	LN	*	1959	06	05.93403	18	35	47.04	-21	08	02.1	248	12.5	076
1959	LO	*	1959	06	05.93403	18	37	09.63	-20	39	37.3	351	12.5	076
1960	XD	*	1960	12	13.51043	03	47	33.17	+18	05	20.5	336		330
1962	HK	*	1962	04	28.90900	13	38	07.88	+00	57	01.7	314		024
1966	VT	*	1966	11	13.87311	00	50	11.19	+11	23	09.3	342		095
1968	FB1	*	1968	03	29.93766	12	54	43.40	-05	08	27.1	352		020
1968	FB1		1968	03	29.95497	12	54	42.76	-05	08	24.7	352		020
1968	FB1		1968	04	03.91054	12	50	48.05	-04	38	18.8	352		020
1968	FB1		1968	04	03.93893	12	50	47.21	-04	38	10.1	352		020
1970	NN	*	1970	07	05.86120	16	15	49.29	-17	14	54.8	346		095
1970	PD1	*	1970	08	13.01679	23	24	07.58	+06	26	32.5	371		095
1970	SR1	*	1970	09	30.98578	02	05	56.91	+08	37	06.1	384		095
1970	TG	*	1970	10	09.07000	02	54	50.16	+30	26	24.9	400		095
1970	VE	*	1970	11	12.78592	01	37	22.94	+02	10	20.1	335		073
1970	VE		1970	11	12.81085	01	37	22.02	+02	10	20.0	335		073
1972	RF4	*	1972	09	05.89167	23	36	16.51	-01	17	27.7	355		056
1972	RF4		1972	09	05.93333	23	36	14.31	-01	18	44.7	355		056
1972	UH	*	1972	10	19.08679	03	51	29.96	+27	50	01.9	338		012
1973	KD	*	1973	05	30.82778	14	45	05.21	-06	21	02.0	335	12.0	076
1973	KE	*	1973	05	30.82778	14	47	24.56	-06	40	23.8	294	14.8	076
1974	NB	*	1974	07	15.89931	19	31	56.76	-19	59	17.2	371	13.0	076
1978	PJ5	*	1978	08	03.88359	21	20	56.52	+00	06	39.3	326	13.0	046

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1978 PJ5   1978 08 03.90037  21 20 55.54  +00 06 43.4   326              046
1986 CL2 * 1986 02 15.00486  09 55 56.65  +10 46 36.8  1986 CP   16.7    046
1986 CL2   1986 02 15.01898  09 55 55.56  +10 46 39.2  1986 CP            046
1989 VA5 * 1989 11 04.60602  01 43 17.08  +14 09 19.5  1989 TG2  17.5    877
1989 VA5   1989 11 04.62326  01 43 16.04  +14 09 18.0  1989 TG2           877
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* * * * *

ERRONEOUS IDENTIFICATIONS.

The following identifications are erroneous:

		Note
A903 HB = (353)	A917 TD = (461)	1

Note 1: cf. AN 215, 416.

* * * * *

IDENTIFICATIONS.

The following list of identifications with numbered minor planets, by G. V. Williams, continues that on MPC 16771.

A903 HB = (481)	A909 BN = (366)	A916 YF = (17)
A917 TD = (1691)	1932 WP = (1385)	1933 UC2 = (1344)
1936 HO = (133)	1937 WQ = (515)	1939 UU = (1327)
1947 OH = (504)	1950 DO1 = (2560)	1952 HM4 = (359)
1952 TM = (14)	1954 BH = (142)	1954 BJ = (376)
1955 DY = (1989)	1955 HZ = (200)	1959 LN = (351)
1959 LO = (248)	1960 XD = (1687)	1962 VK = (1013)
1968 FB1 = (1352)	1970 TG = (3560)	1970 VE = (121)
1973 KD = (294)	1973 KE = (335)	1978 PJ5 = (445)

* * * * *

OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

010 Caussols. 0.9-m Schmidt. Observers C. Pollas and D. Albanese.
046 Klet. Observers A. Mrkos and Z. Vavrova.
372 Geisei. 0.60-m reflector. Observer T. Seki.
385 Oohira. 0.31-m f/5.6 reflector. Observer T. Urata.
413 Siding Spring. Uppsala Southern Schmidt. Observer R. H. McNaught.
415 Kambah, near Canberra. Observer D. Herald.
494 Stakenbridge. Observer B. Manning.
540 Linz. 0.30-m f/5.2 Schmidt-Cassegrain. Observers E. Meyer and H. Raab.
568 Mauna Kea. IRTF encoders. Observers D. Griep, C. Kaminski and T. Brooke.
575 La Chaux-de-Fonds. Observer R. Behrend.
589 Stroncone. 0.5-m f/7.5 Ritchey-Chretien. Observers A. Vagnozzi, G. C. Morando, S. Casulli and R. Castellani.
657 Victoria. Observers J. Tatum and D. Balam.
675 Palomar. 1.2-m and 0.46-cm Schmidts. Observers J. A. Brown, H. E. Holt, H. R. Holt, J. D. Mendenhall, J. Mueller and C. M. Olmstead. Measured by E. Bowell, H. E. Holt and J. Mueller.

688 Lowell Observatory, Anderson Mesa Station. 1.8-m reflector + CCD. Observer B. A. Skiff. Secondary net tied to AGK3 via POSS prints.
801 Oak Ridge Observatory. 1.5-m reflector + CCD. Observers R. E. McCrosky, C.-Y. Shao, B. G. Marsden and G. V. Williams.
807 Cerro Tololo. 4-m reflector + CFCCD (Tek 4). Observer K. J. Meech.
885 JCPM Yakiimo Station. 0.20-m f/4.0 hyperboloid astrocamera. Observer A. Natori. Measured by T. Urata.
887 Ojima. 0.30-m f/5.8 reflector. Observer T. Niijima. Measured by T. Urata.
974 Genoa. Observers R. Alfano, G. Conte and L. Maccarini.
996 Oxford. 0.2-m f/4 Schmidt-Newtonian. Observer W. G. Waddington.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
		Periodic Comet Schwassmann-Wachmann 1					
/1974 II	1990	08 20.35232	01 47 40.38	+21 28 23.4			801
/1974 II	1990	08 20.37020	01 47 40.39	+21 28 23.5			801
/1974 II	1990	09 01.72431	01 46 18.38	+21 44 24.8	14 T	1	885
/1974 II	1990	09 01.73681	01 46 18.35	+21 44 25.5			885
/1974 II	1990	09 12.69931	01 43 43.13	+21 49 36.0	10.5T	2	885
		Periodic Comet Arend-Rigaux					
/1984 XXI	1990	04 29.33517	21 45 35.96	-16 17 50.6			807
/1984 XXI	1990	04 29.36139	21 45 36.88	-16 17 49.7			807
		Periodic Comet Halley					
/1986 III	1990	04 30.11943	09 12 12.95	-02 48 39.6			807
/1986 III	1990	04 30.13251	09 12 12.93	-02 48 38.1			807
		Periodic Comet Machholz					
/1986 VIII	1990	04 29.21582	20 23 10.71	-40 44 06.0			807
/1986 VIII	1990	04 29.25129	20 23 10.94	-40 44 18.1			807
/1986 VIII	1990	04 29.25478	20 23 10.93	-40 44 19.1			807
/1986 VIII	1990	04 29.27300	20 23 11.00	-40 44 25.1			807
/1986 VIII	1990	04 29.30859	20 23 11.19	-40 44 37.4			807
		Periodic Comet Encke					
/1987 XIII	1990	08 30.03785	05 24 39.81	+34 53 30.8			996
/1987 XIII	1990	08 30.05012	05 24 44.02	+34 53 41.8			996
		Comet Jensen-Shoemaker (1988 II)					
/1988 II	1990	04 29.09544	08 12 22.22	-51 20 35.1			807
/1988 II	1990	04 29.10771	08 12 22.54	-51 20 28.9			807
/1988 II	1990	04 29.12010	08 12 22.79	-51 20 23.4			807
		Periodic Comet Tempel 2					
/1988 XIV	1990	04 29.98053	06 10 52.59	+28 28 33.5			807
/1988 XIV	1990	04 29.99089	06 10 52.83	+28 28 34.3			807
/1988 XIV	1990	04 29.99156	06 10 53.18	+28 28 33.7			807
/1988 XIV	1990	04 30.00075	06 10 53.62	+28 28 35.1			807
		Periodic Comet Kopff					
/1988k	1990	08 28.37300	02 31 11.86	+08 30 35.7	15.8T	3	688
/1988k	1990	08 28.37957	02 31 11.88	+08 30 34.7		3	688
/1988k	1990	08 29.32863	02 31 14.38	+08 28 30.0	16.2T		688
/1988k	1990	08 29.33404	02 31 14.40	+08 28 29.0			688
/1988k	1990	08 29.37574	02 31 14.40	+08 28 24.1			688
/1988k	1990	08 29.38001	02 31 14.44	+08 28 23.3			688

Comet Austin (1989c1)

/1989c1	1990	05	28.09271	19	05	20.13	-06	38	37.6		575
/1989c1	1990	05	30.08125	18	34	47.70	-12	23	47.8		575

Comet Levy (1990c)

/1990c	1990	06	20.99722	00	06	35.83	+29	08	22.0		589
/1990c	1990	06	23.03681	00	06	46.03	+29	13	45.1		589
/1990c	1990	06	23.97847	00	06	48.44	+29	16	08.4		589
/1990c	1990	06	26.07396	00	06	47.72	+29	21	11.6		575
/1990c	1990	06	26.97083	00	06	45.53	+29	23	13.5		589
/1990c	1990	07	15.66933	23	57	55.61	+29	37	32.8		385
/1990c	1990	07	15.67176	23	57	55.47	+29	37	32.9		385
/1990c	1990	07	19.92396	23	52	44.29	+29	26	42.1		589
/1990c	1990	07	20.08767	23	52	29.98	+29	26	06.1		575
/1990c	1990	07	25.60295	23	42	43.69	+28	55	14.0		372
/1990c	1990	07	26.06632	23	41	42.87	+28	51	29.3		575
/1990c	1990	07	30.54942	23	30	04.05	+28	02	24.5	6.6T	372
/1990c	1990	08	09.84722	22	44	23.30	+23	31	36.2		589
/1990c	1990	08	09.85139	22	44	21.87	+23	31	24.3		589
/1990c	1990	08	09.88785	22	44	08.04	+23	29	49.4		540
/1990c	1990	08	09.89479	22	44	05.38	+23	29	31.7		540
/1990c	1990	08	09.90174	22	44	02.76	+23	29	12.5		540
/1990c	1990	08	09.90868	22	44	00.19	+23	28	54.4		540
/1990c	1990	08	11.81979	22	31	13.73	+21	53	59.9		589
/1990c	1990	08	11.84685	22	31	02.09	+21	52	31.1		046
/1990c	1990	08	11.84824	22	31	01.42	+21	52	27.9		046
/1990c	1990	08	12.86213	22	23	31.13	+20	53	09.4		046
/1990c	1990	08	12.86352	22	23	30.55	+20	53	05.0		046
/1990c	1990	08	15.65075	22	00	04.87	+17	32	04.8	4 T	372
/1990c	1990	08	15.65214	22	00	04.09	+17	31	57.8		372
/1990c	1990	08	15.66777	21	59	55.35	+17	30	39.7		885
/1990c	1990	08	15.67118	21	59	53.43	+17	30	20.0		885
/1990c	1990	08	15.67326	21	59	52.29	+17	30	11.2		885
/1990c	1990	08	15.88847	21	57	53.48	+17	11	55.9		046
/1990c	1990	08	15.88860	21	57	53.27	+17	11	54.1	6 T	974
/1990c	1990	08	15.88986	21	57	52.71	+17	11	49.5		046
/1990c	1990	08	15.91227	21	57	40.16	+17	09	56.8	6 T	974
/1990c	1990	08	16.23330	21	54	38.33	+16	42	02.5		801
/1990c	1990	08	16.23516	21	54	37.27	+16	41	52.5		801
/1990c	1990	08	16.53947	21	51	42.61	+16	14	34.0		887
/1990c	1990	08	16.54039	21	51	42.10	+16	14	29.0		887
/1990c	1990	08	16.54144	21	51	41.46	+16	14	23.2		887
/1990c	1990	08	17.21326	21	45	02.79	+15	11	01.6		801
/1990c	1990	08	17.21469	21	45	01.91	+15	10	53.1		801
/1990c	1990	08	17.49449	21	42	12.01	+14	43	35.0		415
/1990c	1990	08	17.84750	21	38	32.89	+14	07	17.0		046
/1990c	1990	08	17.84889	21	38	32.05	+14	07	07.4		046
/1990c	1990	08	18.08021	21	36	05.34	+13	42	58.2		575
/1990c	1990	08	18.55147	21	31	03.13	+12	52	26.7		415
/1990c	1990	08	18.92917	21	26	54.95	+12	09	46.1		540
/1990c	1990	08	18.93265	21	26	52.50	+12	09	21.5		540
/1990c	1990	08	18.93750	21	26	49.38	+12	08	48.4		540
/1990c	1990	08	18.94097	21	26	47.12	+12	08	25.8		540
/1990c	1990	08	19.07882	21	25	14.57	+11	52	34.7		575
/1990c	1990	08	19.12187	21	24	45.66	+11	47	36.5		575
/1990c	1990	08	19.50990	21	20	24.54	+11	01	56.5		885
/1990c	1990	08	19.51302	21	20	22.46	+11	01	33.1		885
/1990c	1990	08	19.84337	21	16	34.90	+10	21	30.7		046
/1990c	1990	08	19.84476	21	16	33.97	+10	21	20.3		046

/1990c	1990	08	19.84792	21	16	31.67	+10	21	00.8				540
/1990c	1990	08	19.85208	21	16	28.81	+10	20	30.1				540
/1990c	1990	08	19.85486	21	16	26.82	+10	20	08.0				540
/1990c	1990	08	19.85833	21	16	24.44	+10	19	43.2				540
/1990c	1990	08	20.61719	21	07	28.01	+08	43	44.0				887
/1990c	1990	08	20.62008	21	07	25.91	+08	43	21.3				887
/1990c	1990	08	20.62066	21	07	25.52	+08	43	16.3				887
/1990c	1990	08	23.86667	20	26	14.82	+00	58	57.0				540
/1990c	1990	08	23.87693	20	26	06.66	+00	57	22.0				046
/1990c	1990	08	23.87763	20	26	06.12	+00	57	17.2				046
/1990c	1990	08	23.88161	20	26	02.80	+00	56	38.5				540
/1990c	1990	08	23.88472	20	26	00.39	+00	56	12.1				540
/1990c	1990	08	23.90321	20	25	45.61	+00	53	19.7				046
/1990c	1990	08	23.90390	20	25	45.04	+00	53	14.3				046
/1990c	1990	08	24.01053	20	24	19.39	+00	36	50.7				010
/1990c	1990	08	24.01539	20	24	15.41	+00	36	06.1				010
/1990c	1990	08	24.02017	20	24	11.61	+00	35	20.2				010
/1990c	1990	08	24.02578	20	24	07.14	+00	34	30.4				010
/1990c	1990	08	24.03061	20	24	03.13	+00	33	46.3				010
/1990c	1990	08	24.36076	20	19	39.00	-00	17	14.4				568
/1990c	1990	08	24.51568	20	17	34.49	-00	41	23.6				885
/1990c	1990	08	24.51641	20	17	33.86	-00	41	30.8				885
/1990c	1990	08	24.51884	20	17	31.86	-00	41	53.3				885
/1990c	1990	08	24.83966	20	13	12.40	-01	32	04.4				046
/1990c	1990	08	24.84036	20	13	11.83	-01	32	10.3				046
/1990c	1990	08	24.88299	20	12	37.19	-01	38	53.0				575
/1990c	1990	08	25.82022	19	59	53.16	-04	06	26.1				046
/1990c	1990	08	25.82091	19	59	52.59	-04	06	32.9				046
/1990c	1990	08	26.40383	19	51	55.20	-05	37	57.2				413
/1990c	1990	08	27.47798	19	37	13.96	-08	25	24.9				415
/1990c	1990	08	27.83133	19	32	25.36	-09	20	00.9				046
/1990c	1990	08	27.83203	19	32	24.82	-09	20	07.7				046
/1990c	1990	09	06.39864	17	39	21.21	-27	20	38.4				413
/1990c	1990	09	07.43821	17	29	52.18	-28	30	19.2				413
/1990c	1990	09	08.48543	17	20	53.51	-29	33	07.4				413
/1990c	1990	09	09.52431	17	12	32.09	-30	28	53.0				413
/1990c	1990	09	19.40557	16	14	46.21	-35	48	27.4				413

Periodic Comet Wolf-Harrington

/1990e	1990	07	20.72431	23	18	22.10	+21	22	29.1		19	T	372
/1990e	1990	07	30.66701	23	17	54.75	+22	53	13.6		18.5	T	372
/1990e	1990	07	31.75104	23	17	43.63	+23	02	23.5		18.5	T	372

Periodic Comet Honda-Mrkos-Pajdusakova

/1990f	1990	08	02.44417	03	50	04.01	+07	54	36.8				657
/1990f	1990	08	24.49556	07	36	57.06	+16	11	43.8				657

Comet McNaught-Hughes (1990g)

/1990g	1990	09	08.41336	15	07	51.66	-38	50	25.2				413

Comet Tsuchiya-Kiuchi (1990i)

/1990i	1990	07	24.93431	12	08	46.13	+26	40	11.0				494

Comet Mueller (1990j)

/1990j	1990	09	15.34653	00	44	43.68	+12	33	54.8		17	T	4 675
/1990j	1990	09	15.40299	00	44	42.90	+12	33	44.1				4 675
/1990j	1990	09	16.39253	00	44	23.93	+12	29	06.9		17	T	5 675
/1990j	1990	09	16.42795	00	44	23.21	+12	28	54.0				5 675
/1990j	1990	09	17.32292	00	44	04.82	+12	24	30.6				675

/1990j	1990	09	17.38542	00	44	03.68	+12	24	15.2		675
/1990j	1990	09	18.23653	00	43	45.35	+12	19	45.9		657
/1990j	1990	09	18.24903	00	43	44.86	+12	19	44.1		657
/1990j	1990	09	19.21278	00	43	23.26	+12	14	38.9	6	801
/1990j	1990	09	19.25264	00	43	22.26	+12	14	25.8	6	801
/1990j	1990	09	19.81181	00	43	09.0	+12	11	21	16.5T	372
/1990j	1990	09	20.24868	00	42	59.31	+12	08	52.9		657
/1990j	1990	09	20.27646	00	42	58.56	+12	08	41.0		657
/1990j	1990	09	20.65208	00	42	49.20	+12	06	36.3	16.5T	372
/1990j	1990	09	20.66493	00	42	48.86	+12	06	33.1		372
/1990j	1990	09	21.16814	00	42	36.73	+12	03	34.5		801
/1990j	1990	09	21.19471	00	42	36.01	+12	03	25.2		801
/1990j	1990	09	21.27368	00	42	34.20	+12	02	54.3		657
/1990j	1990	09	21.29590	00	42	33.60	+12	02	49.6		657

Periodic Comet Holt-Olmstead (1990k)

/1990k	1990	09	14.34983	01	39	13.66	+07	37	53.2	17.2T	675
/1990k	1990	09	14.38507	01	39	12.73	+07	38	10.4		675
/1990k	1990	09	16.47205	01	38	16.42	+07	55	48.9	17.0T	675
/1990k	1990	09	16.50451	01	38	15.29	+07	56	04.2		675
/1990k	1990	09	18.42344	01	37	16.14	+08	12	02.2	17.0T	675
/1990k	1990	09	18.45625	01	37	14.93	+08	12	17.9		675
/1990k	1990	09	19.22266	01	36	49.48	+08	18	37.9		801
/1990k	1990	09	19.24689	01	36	48.60	+08	18	49.8		801
/1990k	1990	09	20.26812	01	36	12.43	+08	27	05.8		657
/1990k	1990	09	20.28479	01	36	11.83	+08	27	14.0		657
/1990k	1990	09	20.40602	01	36	07.46	+08	28	23.1	17.0T	675
/1990k	1990	09	20.48281	01	36	04.44	+08	28	59.8		675
/1990k	1990	09	20.67986	01	35	57.38	+08	30	36.6	17 T	372
/1990k	1990	09	21.20037	01	35	37.95	+08	34	49.7		801
/1990k	1990	09	21.21500	01	35	37.38	+08	34	57.0		801

Note 1: coma diameter 0′.1. 2: coma 0′.2 by 0′.4. 3: tail beginning as fan due south of nucleus, curving sharply off to form westward-pointing streamer, at least 4′ long on a longer exposure. 4: tail to south-southwest. 5: faint tail to southwest. 6: time in error on IAUC 5094.

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OBSERVATIONS OF MINOR PLANETS.

The observations are listed separately for each observatory code. Alphabetic note codes shown with some of the observations are defined according to the scheme below. Numerical codes are defined in the headings for the individual observatories.

A earlier approximate position inferior
a sense of motion ambiguous
B black or dark plate
b bad seeing
C correction to earlier position
c crowded star field
D declination uncertain
d diffuse image
E at or near edge of plate
F faint image
f involved with emulsion or plate flaw
G poor guiding
g no guiding

I involved with star
i inkdot measured
M measurement difficult
N near edge of plate, measurement uncertain
O image out of focus
o plate measured in one direction only
P position uncertain
p poor image
R right ascension uncertain
r poor distribution of reference stars
S poor sky
s streaked image
T time uncertain
t trailed image
U uncertain image
u unconfirmed image
V very faint image
W weak image
w weak solution

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
012 Uccle							
T. Pauwels, Observatoire Royal de Belgique, Avenue Circulaire 3, B-1180 Brussels, Belgium							
Observers H. Debehogne, T. Pauwels							
Measurers T. Pauwels, G. Peeters							
Double astrograph							
1	1986 02	13.06111	11 18 28.84	+22 11 15.4			012
1	1986 02	13.06250	11 18 28.76	+22 11 15.6			012
1	1986 02	13.06389	11 18 28.70	+22 11 16.6			012
1	1986 02	13.06528	11 18 28.68	+22 11 17.2			012
1	1986 02	13.06667	11 18 28.60	+22 11 17.8			012
1	1986 02	13.06806	11 18 28.54	+22 11 18.6			012
1	1986 02	13.06944	11 18 28.50	+22 11 19.1			012
1	1986 02	13.07083	11 18 28.44	+22 11 19.8			012
1	1986 02	13.07222	11 18 28.40	+22 11 20.8			012
3	1986 04	16.08351	17 04 50.00	-06 57 15.6		g	012
3	1986 04	16.10417	17 04 49.70	-06 57 09.8		g	012
3	1986 04	16.12483	17 04 49.42	-06 57 03.7		g	012
4	1985 05	13.04618	13 41 51.66	+01 48 24.3		r	012
4	1985 05	13.05660	13 41 51.27	+01 48 24.5		r	012
4	1985 05	13.06701	13 41 50.76	+01 48 23.4		r	012
5	1986 11	13.18492	08 47 18.94	+13 43 07.6		r	012
5	1986 11	13.20328	08 47 20.08	+13 43 03.7		E	012
6	1986 02	18.15417	13 40 45.64	+05 01 11.3			012
6	1986 02	18.17847	13 40 45.58	+05 01 22.7			012
6	1986 02	18.20278	13 40 45.54	+05 01 33.4			012
8	1986 03	11.06250	13 27 24.30	+00 33 44.0		B	012
8	1986 03	11.08333	13 27 23.48	+00 33 52.4		B	012
8	1986 03	11.10417	13 27 22.66	+00 34 00.4		B	012
9	1986 11	04.93924	04 37 45.62	+20 11 11.8			012
9	1986 11	07.01771	04 36 19.24	+20 14 38.5			012
10	1986 12	04.08333	05 50 15.08	+25 14 18.6		O	012
10	1986 12	04.12847	05 50 12.82	+25 14 16.5		O	012
12	1986 11	29.00347	04 41 06.68	+18 49 33.9		d	012
17	1986 11	29.06875	05 47 35.70	+17 25 44.6			012
17	1986 11	29.08958	05 47 34.25	+17 25 45.4			012
22	1986 11	28.98264	04 41 01.88	+23 44 17.2			012

22	1986	11	29.00347	04	41	00.61	+23	44	21.2		012
23	1986	04	02.06111	15	14	51.73	-09	21	19.0		012
23	1986	04	02.07847	15	14	51.10	-09	21	18.4		012
23	1986	04	02.09583	15	14	50.58	-09	21	17.4		012
23	1986	05	14.94861	14	36	41.66	-08	50	18.2		012
23	1986	05	14.95903	14	36	41.08	-08	50	18.3		012
24	1986	02	12.98611	09	09	30.36	+17	34	51.8		012
27	1986	09	09.05139	02	57	26.66	+14	33	13.7		012
27	1986	09	09.06528	02	57	27.04	+14	33	15.8		012
27	1986	09	09.07917	02	57	27.42	+14	33	16.8		012
27	1986	10	09.05208	02	58	40.52	+14	20	36.2		012
27	1986	10	09.07986	02	58	39.67	+14	20	32.4		012
37	1986	02	13.12500	12	10	33.27	+00	25	05.8		012
37	1986	02	13.14764	12	10	32.89	+00	25	07.4	G	012
37	1986	02	13.16609	12	10	32.05	+00	25	11.3		012
39	1986	04	12.12014	16	41	14.93	-08	25	31.2		012
39	1986	05	15.93125	16	24	36.95	-05	48	25.8		012
39	1986	05	15.94514	16	24	36.25	-05	48	23.2		012
39	1986	05	15.96042	16	24	35.56	-05	48	19.2		012
45	1986	02	14.03125	07	27	42.66	+17	44	45.3		012
45	1986	02	14.05208	07	27	41.94	+17	44	50.5		012
45	1986	02	14.07292	07	27	41.28	+17	44	55.3	F	012
65	1986	11	13.18299	08	51	41.42	+15	05	00.6		012
65	1986	11	13.20521	08	51	41.88	+15	04	58.7		012
68	1986	03	11.06250	13	21	27.20	-02	03	40.9	r	012
68	1986	03	11.08333	13	21	26.46	-02	03	35.8	r	012
68	1986	03	11.10417	13	21	25.76	-02	03	32.2	r	012
85	1986	10	22.93229	00	10	47.75	+04	22	50.2	E	012
87	1986	12	23.96563	06	04	50.26	+28	09	10.8		012
88	1986	08	07.96632	22	35	23.65	-01	18	11.3	O	012
88	1986	08	07.98715	22	35	22.90	-01	18	12.6	O	012
88	1986	08	08.00799	22	35	22.03	-01	18	12.8	O	012
89	1986	03	10.85903	05	40	41.17	+30	42	18.9	I	012
89	1986	03	10.87986	05	40	42.31	+30	42	10.2	B	012
89	1986	03	10.90069	05	40	43.35	+30	42	03.6	B	012
93	1986	10	22.91146	00	07	30.95	+02	48	48.7	g	012
93	1986	10	22.93229	00	07	30.06	+02	48	47.5	g	012
97	1986	03	11.06250	13	30	13.62	+00	04	20.2	B	012
97	1986	03	11.08333	13	30	12.90	+00	04	30.5	B	012
97	1986	03	11.10417	13	30	12.20	+00	04	40.4	B	012
104	1986	11	29.00347	04	52	51.80	+24	46	19.6	E	012
117	1985	09	24.01372	00	39	58.08	+13	15	10.4		012
135	1985	08	13.06632	00	22	56.67	+02	31	51.8	T	012
135	1985	08	13.10312	00	22	56.57	+02	31	55.9	E	012
135	1985	09	13.00347	00	08	23.52	+02	00	09.1	B	012
137	1985	06	20.99097	19	08	20.12	-00	48	05.1	B	012
137	1985	06	21.00486	19	08	19.64	-00	48	01.1	B	012
153	1985	09	24.01372	00	56	17.81	+12	21	39.3	E	012
171	1986	10	29.92639	01	32	22.68	+05	57	54.2	F	012
172	1985	09	24.01372	00	38	43.44	+16	12	11.6		012
192	1985	08	13.06632	00	14	43.83	+01	15	20.0	T	012
192	1985	08	13.10312	00	14	43.90	+01	15	34.4		012
192	1985	09	13.00347	00	00	38.57	+03	29	21.4	O	012
192	1985	10	21.94898	23	30	40.62	+04	15	08.8	B	012
235	1986	11	29.00347	04	58	42.19	+24	20	03.0	E	012
240	1986	02	12.98611	09	03	40.30	+18	10	30.0		012
261	1986	11	29.00347	04	28	51.77	+18	42	53.7	E	012
308	1986	02	14.03125	07	26	14.88	+16	29	12.3	V	012
308	1986	02	14.05208	07	26	14.28	+16	29	14.4	V	012

337	1986	04	01.96875	12	32	59.40	-07	37	39.4		012
337	1986	04	01.98264	12	32	58.50	-07	37	36.1		012
337	1986	04	01.99653	12	32	57.63	-07	37	34.4		012
352	1986	11	28.98264	04	42	53.08	+22	00	31.0	O	012
352	1986	11	29.00347	04	42	51.74	+22	00	24.2		012
368	1986	11	29.00347	04	34	03.04	+17	47	21.4	E	012
370	1986	12	23.96563	06	12	26.59	+27	45	24.8	E	012
394	1986	11	28.98264	04	37	10.14	+22	26	39.9		012
394	1986	11	29.00347	04	37	08.76	+22	26	39.5		012
409	1986	11	29.00347	04	49	36.71	+19	44	33.0		012
451	1985	09	24.13646	06	13	04.13	+18	44	17.3		012
471	1986	10	09.14132	06	30	17.18	+19	25	04.2		012
471	1986	10	09.15590	06	30	17.98	+19	25	07.5		012
471	1986	10	09.17049	06	30	18.79	+19	25	10.2		012
485	1986	10	22.91146	00	08	26.66	+01	27	55.9	g	012
485	1986	10	22.93229	00	08	25.88	+01	27	45.8	g	012
487	1986	11	29.06875	05	35	57.69	+13	07	25.3	d	012
511	1986	04	01.86944	06	25	03.97	+26	18	15.4		012
511	1986	04	01.88273	06	25	04.83	+26	18	16.6	G	012
511	1986	04	01.89601	06	25	05.72	+26	18	18.0		012
537	1986	11	29.06875	05	34	05.72	+14	11	10.7	F	012
537	1986	11	29.08958	05	34	04.92	+14	11	11.6	E	012
614	1986	11	29.06875	05	59	01.11	+15	33	46.4	E	012
614	1986	11	29.08958	05	59	00.13	+15	33	41.4	g	012
704	1986	02	12.89236	02	01	40.93	+24	35	46.9	g	012
704	1986	02	12.89238	02	01	40.96	+24	35	47.6	E	012
704	1986	11	13.18299	08	48	26.16	+13	35	51.5	E	012
704	1986	11	13.20521	08	48	26.60	+13	35	42.7		012
740	1986	11	29.06875	05	41	55.50	+13	53	21.0	E	012
743	1986	11	29.08958	05	44	35.09	+19	37	19.8		012
770	1986	12	23.96563	05	56	03.18	+29	55	01.4		012
934	1986	02	12.98611	09	13	44.75	+18	58	06.9		012
1005	1985	09	24.01372	00	44	47.46	+17	02	38.6	D	012
1028	1986	11	29.00347	04	52	23.37	+24	30	29.8		012
1151	1985	09	24.01372	00	48	31.47	+14	59	54.8	F	012
1189	1986	12	04.08333	05	43	44.60	+27	06	29.4	F	012
1278	1986	11	29.08958	05	38	14.94	+19	25	40.6	E	012
1294	1986	11	29.00347	04	51	40.47	+19	29	54.1		012
2052	1986	11	29.06875	05	43	25.32	+13	08	08.0	F	012

023 Wiesbaden
J. Jahn, Neustadter Strasse 11, D-3123 Bodenteich, Federal Republic of Germany
Observer M. Kretlow
0.13-m refractor
From Minor Planet Bulletin

349	1989	03	07.02705	10	51	47.2	+17	31	48		023
349	1989	03	07.03191	10	51	46.8	+17	31	49		023
349	1989	03	07.04233	10	51	46.1	+17	31	50		023
349	1989	03	07.04719	10	51	45.9	+17	31	54		023

033 Tautenburg
S. Marx, Karl Schwarzschild Observatorium, DDR-6901 Tautenburg, Federal Republic of Germany
Observer B. Stecklum
Measurer F. Borngen
1.3-m Schmidt telescope
SAOC

1986	WM3	1990	07	27.00451	00	13	45.38	+02	35	28.2	17.1	033
1986	WM3	1990	07	28.02049	00	13	45.07	+02	41	34.3		033
1986	WM3	1990	07	29.00729	00	13	43.05	+02	47	22.5		033
1986	WM3	1990	07	31.01563	00	13	33.69	+02	58	46.0		033
1989	AY6	1990	07	26.98333	21	48	53.28	-11	56	13.9		033
1989	AY6	1990	07	27.02361	21	48	51.23	-11	56	20.5	17.7	033
1989	AY6	1990	07	28.04028	21	47	59.59	-11	59	10.2		033
1990	OO3	1990	07	26.98333	21	43	32.95	-11	20	16.6	V	033
1990	OO3	1990	07	27.02361	21	43	31.26	-11	20	29.6	18.4	033
1990	OT3	1990	07	26.98333	21	51	35.94	-11	36	09.6	I	033
1990	OT3	1990	07	27.02361	21	51	33.99	-11	36	14.9	17.3	033
1990	OT3	1990	07	28.04028	21	50	41.64	-11	38	26.5		033
4015	P-L	1990	07	26.98333	21	44	44.11	-13	29	39.9	I	033
4015	P-L	1990	07	27.02361	21	44	42.57	-13	29	43.7	18.0	033
4015	P-L	1990	07	28.04028	21	44	02.45	-13	31	28.7		033
117		1990	07	27.00451	00	14	14.25	+00	39	48.4	14	033
117		1990	07	28.02049	00	14	12.48	+00	43	36.3		033
117		1990	07	29.00729	00	14	09.47	+00	47	12.4		033
117		1990	07	31.01563	00	13	59.36	+00	54	14.0		033
277		1990	02	22.98877	09	11	04.02	+14	29	08.8	15.1	033
287		1990	07	26.98333	21	52	47.74	-11	09	04.1		033
287		1990	07	27.02361	21	52	46.13	-11	09	23.8	12.3	033
287		1990	07	28.04028	21	52	06.31	-11	17	59.4		033
828		1990	07	27.00451	00	20	03.42	+01	48	53.4	16.5	033
828		1990	07	28.02049	00	20	09.48	+01	49	44.1		033
828		1990	07	29.00729	00	20	14.17	+01	50	26.2		033
828		1990	07	31.01563	00	20	20.15	+01	51	28.4		033
851		1990	07	26.98333	21	51	25.81	-12	40	57.3		033
851		1990	07	27.02361	21	51	23.88	-12	41	09.5	16.0	033
851		1990	07	28.04028	21	50	35.21	-12	46	27.9		033
984		1990	02	22.98877	09	14	34.18	+14	03	01.1	15.2	033
1691		1990	07	27.00451	00	17	59.14	+02	07	41.1	16.7	033
1691		1990	07	28.02049	00	18	12.69	+02	08	52.4		033
1691		1990	07	29.00729	00	18	24.66	+02	09	53.8		033
1691		1990	07	31.01563	00	18	45.34	+02	11	33.8		033
1692		1990	02	22.98877	09	10	17.89	+13	13	52.7	16.7	033
1951		1990	08	01.95000	20	31	33.46	-12	46	04.2	14.0	033
1951		1990	08	01.95694	20	31	32.65	-12	46	54.2		033
1951		1990	08	01.98889	20	31	28.79	-12	50	42.0		033
1951		1990	08	01.99583	20	31	27.96	-12	51	32.1		033
2186		1990	07	26.98333	21	52	05.16	-10	49	53.0		033
2186		1990	07	27.02361	21	52	03.57	-10	49	57.4	17.4	033
2186		1990	07	28.04028	21	51	21.43	-10	52	29.2		033
2284		1990	02	22.98877	09	12	54.38	+15	46	51.3	16.3	033
2392		1990	07	26.98333	21	46	24.26	-12	56	48.6		033
2392		1990	07	27.02361	21	46	22.45	-12	57	01.7	17.9	033
3040		1990	08	01.03542	22	10	04.08	-04	42	33.7	17.7	033
3040		1990	08	01.04375	22	10	03.50	-04	42	52.2		033
3040		1990	08	01.05486	22	10	02.90	-04	43	14.9		033
3040		1990	08	01.06319	22	10	02.40	-04	43	33.9		033
3065		1990	07	26.98333	21	44	57.58	-11	51	05.7		033
3065		1990	07	27.02361	21	44	55.87	-11	51	10.2	17.3	033
3065		1990	07	28.04028	21	44	10.02	-11	53	28.8		033
3160		1990	02	22.98877	09	11	22.74	+14	26	59.5	18.8	033
3752		1990	07	30.99167	22	08	00.15	+12	41	02.2	18.2	033
3752		1990	07	31.00000	22	07	59.32	+12	40	43.5		033
3752		1990	07	31.02986	22	07	56.48	+12	39	37.0		033
3752		1990	07	31.03819	22	07	55.69	+12	39	17.0		033
3791		1990	07	26.98333	21	54	52.83	-13	08	05.6		033

3791		1990	07	27.02361	21	54	51.23	-13 08 11.9	17.1	033
3791		1990	07	28.04028	21	54	11.68	-13 11 14.7		033
3929		1990	02	22.98877	09	12	36.29	+15 17 24.2	18.4	033
3954		1990	02	22.98877	09	13	29.33	+14 17 43.8	18.7	033

046 Klet
A. Mrkos, Dept. of Astronomy and Astrophysics, Charles University, Svedska 8, C-15000 Prague 5, Czechoslovakia
Observers A. Mrkos, Z. Vavrova
0.6-m Maksutov reflector

1988	AF	1990	08	17.88257	21	36	39.54	-03 41 53.7		046
1988	AF	1990	08	17.89681	21	36	39.01	-03 41 53.5		046
1988	AW1	1990	08	19.88465	21	06	25.02	-12 52 39.1		046
1988	AW1	1990	08	19.89958	21	06	24.11	-12 52 37.4		046
1988	AW1	1990	08	24.91507	21	01	29.44	-12 38 45.7		046
1988	AW1	1990	08	24.92913	21	01	28.78	-12 38 44.2		046
1989	EG	1990	08	24.97875	22	14	54.21	-05 27 50.9		046
1989	EG	1990	08	24.99148	22	14	53.47	-05 27 55.5		046
1990	OY3	1990	08	17.91833	21	43	13.73	-13 48 16.1		046
1990	OY3	1990	08	17.93118	21	43	13.15	-13 48 18.2		046
1990	QB	1990	08	24.94819	22	12	45.38	-11 50 38.8	16.6	046
1990	QB	1990	08	24.96093	22	12	44.27	-11 50 30.5		046
44		1990	08	24.94819	22	09	33.44	-13 26 29.2		046
44		1990	08	24.96093	22	09	32.62	-13 26 34.3		046
44		1990	08	27.92554	22	06	49.87	-13 45 09.7		046
44		1990	08	27.93966	22	06	49.07	-13 45 15.0		046
44		1990	08	28.94209	22	05	54.02	-13 51 25.6		046
44		1990	08	28.95622	22	05	53.27	-13 51 30.9		046
163		1990	08	19.88465	20	57	54.76	-14 12 29.3		046
163		1990	08	19.89958	20	57	53.96	-14 12 35.0		046
287		1990	08	17.91833	21	35	14.57	-14 35 54.5		046
287		1990	08	17.93118	21	35	13.89	-14 36 02.1		046
484		1990	08	15.96458	21	20	41.51	-20 03 21.5		046
484		1990	08	15.97743	21	20	40.93	-20 03 28.3		046
540		1990	08	17.88257	21	36	01.99	-05 39 30.9		046
540		1990	08	17.89681	21	36	01.20	-05 39 37.6		046
703		1990	08	17.96972	21	57	48.20	-07 35 02.7		046
703		1990	08	17.98153	21	57	47.23	-07 35 07.9		046
703		1990	08	19.92736	21	55	56.49	-07 46 01.5		046
703		1990	08	19.93917	21	55	55.88	-07 46 04.5		046
851		1990	08	17.91833	21	30	55.47	-14 48 34.0		046
851		1990	08	17.93118	21	30	54.87	-14 48 38.3		046
1244		1990	08	17.88257	21	36	16.90	-02 49 59.5		046
1244		1990	08	17.89681	21	36	16.10	-02 50 01.4		046
1457		1990	08	19.88465	20	58	42.96	-13 15 35.9		046
1457		1990	08	19.89958	20	58	42.25	-13 15 37.8		046
1457		1990	08	24.91507	20	54	39.14	-13 24 16.0		046
1457		1990	08	24.92913	20	54	38.55	-13 24 17.0		046
1528		1990	08	24.94819	22	05	41.20	-14 26 30.0	16.2	046
1528		1990	08	24.96093	22	05	40.58	-14 26 34.7		046
1605		1990	08	24.97875	22	12	56.25	-05 02 10.0		046
1605		1990	08	24.99148	22	12	55.69	-05 02 16.7		046
1605		1990	08	28.97497	22	10	05.64	-05 29 48.2		046
1605		1990	08	28.98914	22	10	05.02	-05 29 53.8		046
1894		1990	08	17.96972	22	03	15.21	-10 30 39.6		046
1894		1990	08	17.98153	22	03	14.43	-10 30 45.4		046
2080		1990	08	15.92146	21	59	51.68	-18 44 31.3		046
2080		1990	08	15.93431	21	59	50.74	-18 44 34.4		046
2175		1990	08	17.88257	21	32	05.07	-06 08 18.4		046

2175		1990	08	17.89681	21	32	04.30	-06	08	26.4	046
2186		1990	08	17.91833	21	34	10.21	-12	00	33.4	046
2186		1990	08	17.93118	21	34	09.24	-12	00	35.0	046
2293		1990	08	24.94819	22	10	27.57	-11	59	28.3	046
2293		1990	08	24.96093	22	10	26.93	-11	59	31.7	046
2347		1990	08	28.90541	21	53	36.89	+01	56	20.7	046
2347		1990	08	28.91981	21	53	36.08	+01	56	19.2	046
2739		1990	08	17.96972	21	57	42.79	-10	26	07.3	046
2739		1990	08	17.98153	21	57	42.21	-10	26	09.3	046
2739		1990	08	19.92736	21	55	58.34	-10	34	37.8	046
2739		1990	08	19.93917	21	55	57.65	-10	34	39.9	046
3479		1990	08	27.89198	21	45	27.00	+01	20	35.5	046
3479		1990	08	27.90616	21	45	26.42	+01	20	29.7	046
3847		1990	08	15.92146	21	51	09.06	-18	21	08.2	046
3847		1990	08	15.93431	21	51	08.29	-18	21	12.1	046
4552		1990	08	24.94819	22	08	44.09	-13	13	07.4	046
4552		1990	08	24.96093	22	08	43.31	-13	13	10.4	046
4552		1990	08	28.94209	22	04	54.41	-13	24	28.5	046
4552		1990	08	28.95622	22	04	53.66	-13	24	30.2	046

071 Bulgarian National Observatory
V. G. Shkodrov, Department of Astronomy, Bulgarian Academy of Sciences,
72 Lenin Boulevard, BG-1784 Sofia, Bulgaria
Observers V. G. Shkodrov, V. G. Ivanova, Ch. Dinev, V. I. Umlenski,
A. Stoev
Measurer V. I. Umlenski

1978	OK		1990	01	24.76119	05	12	49.76	+23	35	05.0	071
1978	OK		1990	01	24.82497	05	12	49.49	+23	35	13.2	071
1978	OK		1990	01	25.90292	05	12	47.42	+23	37	40.6	071
1978	OK		1990	01	25.94840	05	12	47.44	+23	37	46.4	071
1989	UE8		1989	12	01.85410	02	39	23.85	+11	13	42.6	071
1989	UE8		1989	12	01.90502	02	39	21.39	+11	13	40.4	071
1990	BH3	*	1990	01	24.76119	05	05	56.45	+24	58	02.0	071
1990	BH3		1990	01	24.82497	05	05	56.16	+24	57	52.4	071
1990	BH3		1990	01	25.90292	05	05	54.24	+24	55	14.9	071
1990	BH3		1990	01	25.94840	05	05	54.19	+24	55	08.1	071
103			1990	01	23.95602	07	18	23.61	+19	06	12.3	071
103			1990	01	23.97856	07	18	22.47	+19	06	16.5	071
175			1990	01	26.09626	10	29	16.70	+13	06	53.2	071
175			1990	01	26.11958	10	29	15.80	+13	06	57.3	071
180			1990	01	24.76119	05	04	27.82	+23	37	39.7	071
180			1990	01	24.82497	05	04	27.25	+23	37	36.2	071
180			1990	01	25.90292	05	04	19.64	+23	36	47.1	071
180			1990	01	25.94840	05	04	19.36	+23	36	45.1	071
197			1990	01	28.78499	02	43	04.10	+12	38	36.4	071
197			1990	01	28.81554	02	43	05.29	+12	38	47.1	071
206			1990	01	24.00530	09	23	57.86	+14	01	16.4	071
206			1990	01	24.05437	09	23	55.39	+14	01	31.2	071
277			1990	01	25.07427	09	34	57.97	+12	36	37.2	071
277			1990	01	25.10205	09	34	56.68	+12	36	43.1	071
277			1990	01	26.01696	09	34	14.20	+12	40	01.5	071
277			1990	01	26.04690	09	34	12.78	+12	40	07.3	071
371			1990	01	24.76119	04	53	34.52	+24	53	59.6	071
371			1990	01	24.82497	04	53	33.55	+24	53	48.4	071
371			1990	01	25.90292	04	53	19.60	+24	50	34.8	071
371			1990	01	25.94840	04	53	19.00	+24	50	26.8	071
375			1990	01	26.09626	10	35	40.40	+12	23	34.2	071
375			1990	01	26.11958	10	35	39.50	+12	23	34.8	071
407			1990	01	24.76119	05	10	33.73	+26	38	37.4	071

407	1990	01	24.82497	05	10	32.71	+26	38	22.3	071
407	1990	01	25.90292	05	10	18.84	+26	33	25.3	071
407	1990	01	25.94840	05	10	18.86	+26	33	25.5	071
434	1990	07	23.92569	20	38	11.70	+18	37	42.7	071
434	1990	07	23.95686	20	38	10.40	+18	37	25.7	071
449	1989	12	01.85410	02	45	55.94	+13	13	34.8	071
449	1989	12	01.90502	02	45	53.40	+13	13	29.3	071
449	1990	01	28.78499	02	49	45.88	+15	17	22.1	071
449	1990	01	28.81554	02	49	47.25	+15	17	31.5	071
459	1989	12	01.77840	00	17	32.15	+02	07	14.6	071
459	1989	12	01.81694	00	17	33.06	+02	07	34.4	071
462	1990	01	26.09626	10	19	39.90	+13	27	48.5	071
462	1990	01	26.11958	10	19	39.00	+13	27	55.3	071
556	1990	01	24.76119	05	07	49.75	+24	11	04.2	071
556	1990	01	24.82497	05	07	49.17	+24	10	51.3	071
556	1990	01	25.90292	05	07	42.10	+24	07	22.4	071
556	1990	01	25.94840	05	07	41.83	+24	07	12.7	071
739	1990	01	26.09626	10	24	08.80	+13	41	41.2	071
739	1990	01	26.11958	10	24	08.20	+13	42	00.3	071
748	1990	01	24.76119	05	13	08.60	+22	40	33.3	071
748	1990	01	24.82497	05	13	07.73	+22	40	29.0	071
748	1990	01	25.90292	05	12	53.89	+22	39	41.9	071
748	1990	01	25.94840	05	12	53.44	+22	39	39.6	071
936	1990	01	26.09626	10	34	52.20	+12	17	49.6	071
936	1990	01	26.11958	10	34	51.50	+12	17	55.2	071
988	1989	12	01.75896	23	37	29.00	-03	20	12.6	071
988	1989	12	01.79733	23	37	30.50	-03	20	02.3	071
1045	1989	12	01.77840	00	15	17.20	+02	00	02.3	071
1045	1989	12	01.81694	00	15	18.25	+02	00	08.9	071
1573	1989	12	01.75896	23	51	52.60	-04	42	12.1	071
1573	1989	12	01.79733	23	51	55.80	-04	42	29.1	071
1624	1990	01	25.07427	09	43	20.57	+13	53	14.8	071
1624	1990	01	25.10205	09	43	19.43	+13	53	21.6	071
1624	1990	01	26.01696	09	42	42.52	+13	57	10.7	071
1624	1990	01	26.04690	09	42	41.29	+13	57	18.0	071
1635	1989	12	01.85410	02	41	06.65	+13	37	29.6	071
1635	1989	12	01.90502	02	41	04.54	+13	37	20.2	071
1642	1990	01	26.09626	10	36	16.20	+13	16	38.1	071
1642	1990	01	26.11958	10	36	15.20	+13	16	38.4	071
1692	1990	01	25.07427	09	34	15.53	+11	12	10.7	071
1692	1990	01	25.10205	09	34	14.20	+11	12	16.7	071
1692	1990	01	26.01696	09	33	31.96	+11	15	41.1	071
1692	1990	01	26.04690	09	33	30.63	+11	15	47.4	071
1984	1989	12	01.85410	02	43	14.22	+10	47	23.3	071
1984	1989	12	01.90502	02	43	12.28	+10	47	15.1	071
2120	1989	12	01.85410	02	37	29.29	+12	14	42.1	071
2120	1989	12	01.90502	02	37	27.45	+12	14	22.6	071
2123	1990	01	25.07427	09	29	45.65	+14	43	03.1	071
2123	1990	01	25.10205	09	29	44.24	+14	43	09.6	071
2123	1990	01	26.01696	09	28	59.94	+14	46	25.1	071
2123	1990	01	26.04690	09	28	58.66	+14	46	30.6	071
2222	1990	01	26.09626	10	39	38.00	+11	38	57.4	071
2222	1990	01	26.11958	10	39	37.40	+11	39	03.8	071
2284	1990	01	25.07427	09	39	48.74	+12	16	38.5	071
2284	1990	01	25.10205	09	39	47.32	+12	16	49.8	071
2284	1990	01	26.01696	09	39	02.88	+12	22	51.4	071
2284	1990	01	26.04690	09	39	01.36	+12	23	03.4	071
2341	1989	12	01.85410	02	32	04.96	+14	01	45.8	071
2341	1989	12	01.90502	02	32	02.96	+14	01	49.6	071

2659		1989	12	01.85410	02	39	55.93	+13	40	09.9	071
2659		1989	12	01.90502	02	39	53.93	+13	40	01.2	071
2681		1989	12	01.85410	02	49	46.83	+14	50	04.7	071
2681		1989	12	01.90502	02	49	44.47	+14	50	00.3	071
2742		1990	01	26.09626	10	33	13.90	+11	03	58.8	071
2742		1990	01	26.11958	10	33	13.30	+11	04	03.6	071
2781		1990	01	25.07427	09	45	41.65	+12	58	12.6	071
2781		1990	01	25.10205	09	45	40.40	+12	58	19.2	071
2781		1990	01	26.01696	09	45	01.42	+13	02	14.1	071
2781		1990	01	26.04690	09	45	00.08	+13	02	22.8	071
2973		1990	01	25.07427	09	44	38.09	+14	35	42.3	071
2973		1990	01	25.10205	09	44	36.58	+14	35	48.5	071
2973		1990	01	26.01696	09	43	48.29	+14	39	20.1	071
2973		1990	01	26.04690	09	43	46.72	+14	39	26.4	071
3419		1989	12	01.85410	02	41	30.42	+11	23	51.5	071
3419		1989	12	01.90502	02	41	28.16	+11	23	56.0	071
3899		1990	01	26.09626	10	29	53.10	+13	15	28.6	071
3899		1990	01	26.11958	10	29	52.30	+13	15	34.4	071
3929		1990	01	25.07427	09	40	17.19	+12	31	22.8	071
3929		1990	01	25.10205	09	40	15.74	+12	31	30.5	071
3929		1990	01	26.01696	09	39	27.25	+12	36	29.2	071
3929		1990	01	26.04690	09	39	25.66	+12	36	38.1	071

091 Aurec-sur-Loire
R. Chanal, Observatore de Nurol, F-43110 Aurec-sur-Loire, France
0.41-m reflector
From Minor Planet Bulletin

1989	OB	1989	08	30.91667	21	30	45.62	+15	20	52.4	091
1989	OB	1989	08	30.93889	21	30	46.10	+15	21	40.6	091
1989	OB	1989	08	30.95833	21	30	46.73	+15	22	30.9	091
1989	OB	1989	08	30.97917	21	30	46.94	+15	23	07.4	091
1989	OB	1989	09	04.92361	21	33	41.75	+18	31	32.7	091
1989	OB	1989	09	04.94444	21	33	42.04	+18	32	08.6	091
148		1989	05	08.05069	15	02	27.95	+18	55	44.9	091
264		1989	11	28.88958	01	11	59.77	+03	39	58.1	091
264		1989	11	29.92430	01	11	48.42	+03	45	02.6	091
365		1989	10	22.87222	00	18	20.35	-01	34	43.7	091
365		1989	11	29.89861	00	17	37.35	-04	21	40.2	091
433		1989	01	25.76736	02	04	37.86	+23	38	36.6	091
433		1989	01	25.78819	02	04	41.96	+23	38	31.4	091
433		1989	01	26.87014	02	08	27.12	+23	34	22.2	091
433		1989	01	27.78542	02	11	40.22	+23	30	49.2	091
433		1989	01	28.79375	02	15	13.43	+23	26	52.4	091
433		1989	02	01.85972	02	29	48.91	+23	10	10.2	091
1497		1990	03	23.92639	10	25	33.97	+08	44	43.8	091
1497		1990	03	23.99375	10	25	31.43	+08	44	59.7	091
1509		1990	01	21.99097	06	49	09.34	+15	17	43.3	091
1509		1990	01	22.91875	06	47	50.58	+15	04	09.5	091
1509		1990	02	17.89930	06	27	09.62	+10	04	18.3	091
1509		1990	02	19.91319	06	26	55.48	+09	47	48.1	091
1509		1990	02	20.93194	06	26	52.45	+09	39	48.7	091
1509		1990	02	23.88889	06	27	00.00	+09	17	40.4	091
1509		1990	02	24.90486	06	27	07.54	+09	10	26.0	091
1580		1989	05	08.09930	17	04	54.61	+60	59	25.5	091
1629		1989	03	06.06944	11	21	31.29	+15	03	46.4	091
1629		1989	03	07.03403	11	20	40.70	+15	15	24.2	091
1917		1989	10	04.90278	20	43	23.10	-06	33	22.3	091
1917		1989	10	04.91667	20	43	26.86	-06	35	32.2	091
1917		1989	10	05.84595	20	48	10.15	-09	14	23.2	091

1917		1989	10	05.85289	20	48	12.35	-09	15	35.3	091
2001		1989	02	09.02833	08	53	07.70	+51	21	16.0	091
2001		1989	02	10.07222	08	50	53.92	+51	10	17.0	091
2001		1989	03	05.91875	08	16	19.34	+44	34	49.3	091
3040		1989	03	06.01389	10	29	14.92	+39	55	37.6	091
3040		1989	03	06.97917	10	27	56.35	+40	29	09.5	091
3043		1989	03	06.09236	10	55	08.86	+13	44	36.0	091
3043		1989	03	07.00208	10	53	37.72	+13	40	24.8	091
3119		1989	02	08.99306	08	38	24.96	+21	15	54.7	091
3119		1989	02	10.00167	08	37	36.03	+21	20	23.8	091
3410		1990	02	24.00694	10	50	14.63	+07	38	04.0	091
3410		1990	02	24.05486	10	50	11.59	+07	38	11.8	091
3410		1990	02	24.94514	10	49	15.54	+07	40	40.8	091
3410		1990	02	24.95486	10	49	14.88	+07	40	42.6	091
3410		1990	02	25.02083	10	49	10.62	+07	40	53.7	091
3410		1990	03	23.92639	10	23	40.46	+08	41	17.7	091
3410		1990	03	23.99375	10	23	37.64	+08	41	22.3	091
4197		1989	10	04.98333	00	37	30.40	+05	07	44.6	091
4197		1989	10	04.99826	00	37	28.57	+05	07	39.5	091
4424		1990	03	23.95556	11	28	03.62	+18	02	35.6	091
4424		1990	03	24.00625	11	28	01.34	+18	03	01.2	091

372 Geisei
T. Seki, Kamimachi 2-9-35, Kochi, Japan
0.60-m reflector

1975	VZ		1990	08	24.68437	21	17	23.28	-15	58	05.6	17.5	372
1975	VZ		1990	08	24.69722	21	17	22.66	-15	58	07.1		372
1986	TB12		1990	08	20.60729	21	20	54.88	-16	32	34.4	18	372
1986	TB12		1990	08	20.62049	21	20	54.32	-16	32	36.9		372
1987	UM1		1990	07	30.63958	22	32	34.80	-04	40	22.9	17.5	372
1987	UM1		1990	08	18.75330	22	17	04.25	-05	54	40.4	16.5	372
1987	UM1		1990	08	18.76389	22	17	03.69	-05	54	42.2		372
1987	UM1		1990	08	26.69132	22	09	22.44	-06	37	10.9	17.5	372
1990	OY2		1990	08	20.62049	21	19	56.69	-16	24	05.1	18.5	372
1990	OR3		1990	08	24.68437	21	19	25.14	-15	46	22.0	17.5	372
1990	OR3		1990	08	24.69722	21	19	24.49	-15	46	22.0		372
1990	OR3		1990	08	26.56910	21	17	42.30	-15	47	21.8	18	372
1990	OR3		1990	08	26.58160	21	17	41.78	-15	47	22.0		372
1990	QF		1990	08	26.62014	22	04	58.90	-11	47	00.9	16.5	372
1990	QF		1990	08	26.62986	22	04	58.19	-11	47	01.1		372
1990	QF		1990	08	28.69722	22	02	42.91	-11	49	09.0		372
1990	QF		1990	09	10.51486	21	49	56.03	-11	56	13.0	17	372
1990	QF		1990	09	10.52597	21	49	55.13	-11	56	10.6		372
1990	QG		1990	08	27.70208	22	36	00.74	-07	18	41.2	16.5	372
1990	QG		1990	08	27.71250	22	36	00.21	-07	18	40.3		372
1990	QG		1990	08	31.67656	22	32	41.50	-07	17	26.6	16.5	372
1990	QG		1990	08	31.68819	22	32	40.93	-07	17	25.4		372
1990	QG		1990	09	10.53653	22	24	28.19	-07	14	30.4	17	372
1990	QG		1990	09	10.54611	22	24	27.25	-07	14	30.5		372
1990	QM	*	1990	08	20.72813	22	40	33.81	-07	40	46.0	17	372
1990	QM		1990	08	20.73993	22	40	33.13	-07	40	48.5		372
1990	QM		1990	08	24.63378	22	37	22.46	-08	08	00.9	17	372
1990	QM		1990	08	24.64601	22	37	21.88	-08	08	04.4		372
1990	QM		1990	08	26.64132	22	35	41.37	-08	22	14.8	16.5	372
1990	QM		1990	08	26.65382	22	35	40.69	-08	22	18.5		372
1990	QM		1990	08	28.67326	22	33	58.25	-08	36	37.6	16.5	372
1990	QM		1990	08	28.68576	22	33	57.54	-08	36	43.6		372
1990	QM		1990	08	31.65660	22	31	27.26	-08	57	45.0	16	372

1990 QM		1990 08 31.66771	22 31 26.55	-08 57 49.6			372
1990 QE1	*	1990 08 27.76111	00 06 59.70	+06 54 42.5		17	372
1990 QE1		1990 08 27.77292	00 06 59.29	+06 54 42.5			372
1990 QE1		1990 08 28.71007	00 06 29.75	+06 54 28.1		17	372
1990 QA2		1990 08 27.73646	23 30 47.81	-01 58 02.9		18.5	372
1990 QA2		1990 08 27.74826	23 30 47.21	-01 58 06.1			372
1990 SC	*	1990 09 19.81181	00 43 05.46	+12 09 46.9		18	372
1990 SC		1990 09 20.65208	00 42 24.22	+12 10 42.5		18	372
1990 SC		1990 09 20.66493	00 42 23.43	+12 10 44.0			372
1990 SC		1990 09 21.60729	00 41 35.98	+12 11 35.8		18	372
1990 SC		1990 09 21.61840	00 41 35.44	+12 11 36.1			372
1990 SD	*	1990 09 19.81181	00 44 55.10	+12 06 44.7		18	372
1990 SD		1990 09 20.65208	00 44 11.12	+12 04 14.1		17.5	372
1990 SD		1990 09 20.66493	00 44 10.21	+12 04 12.2			372
841		1990 08 15.49687	19 44 21.17	-26 04 14.7			372
841		1990 08 15.51146	19 44 20.49	-26 04 15.1			372
1408		1990 08 28.71007	00 08 36.51	+06 58 38.6		16	372
2043		1990 08 24.68437	21 16 32.26	-15 51 31.0		16.5	372
2043		1990 08 24.69722	21 16 31.81	-15 51 32.6			372
2043		1990 08 26.57535	21 15 07.70	-15 55 51.6		16.5	372

385 Nihondaira Observatory Oohira station
T. Urata, 6-1, Muramatsuhara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan
Observers W. Kakei, M. Kizawa, T. Urata
Measurers M. Kizawa, T. Urata
0.31-m f/5.6 reflector
AGK3

1990 RB	*	1990 09 12.54698	00 09 14.01	+15 05 32.0		16	385
1990 RB		1990 09 12.56909	00 09 13.17	+15 05 28.8			385

392 JCPM Sapporo Station
K. Watanabe, 3-8-B203, Ashibetsu Chuo 3 Jo 4 Chome, Shiroishi-Ku,
Sapporo 005, Japan
0.30-m f/2.7 Schmidt camera

A923 RH		1990 09 21.52176	23 29 24.32	-07 20 44.0		15.5	392
A923 RH		1990 09 21.52604	23 29 24.04	-07 20 43.4			392
1990 OM		1990 08 27.57813	23 10 43.62	-08 47 06.4		15.0	392
1990 QT3		1990 09 13.50521	23 10 55.91	-08 48 53.8		16.0	392
1990 QT3		1990 09 13.51701	23 10 55.42	-08 48 59.5			392
1990 RA	*	1990 09 13.49809	22 33 20.28	-13 48 22.8		15.5	392
1990 RA		1990 09 13.52488	22 33 19.39	-13 48 29.3			392
1990 RA		1990 09 15.53854	22 32 11.98	-13 57 03.3		15.5	392

399 Kushiro
H. Kaneda, Taiyo MS 2-H, 2 chome 2-15, kawazoe 8 jo, Minami-ku,
Sapporo 005, Japan
Observer S. Ueda
Measurer H. Kaneda
0.16-m f/3.8 Wright-Schmidt camera
AGK3

1980 FV1		1990 01 28.52535	09 15 43.98	+25 27 54.7		16	399
1980 FV1		1990 01 28.54340	09 15 43.11	+25 27 58.2			399
1980 FV1		1990 01 28.56111	09 15 42.11	+25 28 00.1			399
1980 FV1		1990 01 30.53472	09 13 49.25	+25 32 06.5		15.5	399
1980 FV1		1990 01 30.54931	09 13 48.42	+25 32 08.9			399
1980 FV1		1990 01 30.56736	09 13 47.33	+25 32 08.9			399
1990 FG		1990 03 18.61962	12 07 31.77	-05 03 42.6		16	399
1990 FG		1990 03 18.63403	12 07 30.15	-05 03 48.3			399

400 Kitami
K. Watanabe, 3-8 Mason Hashimoto B-203, atsubetsu cyuo 3 jo 4 chome,
Atsubetsu-ku, Sapporo 004, Japan
Observer K. Endate
Measurer K. Watanabe
0.20-m f/4.0 reflector
SAOC

A923	RH		1990	08	18.67187	00	02	51.38	-08	47	51.5	15.5	400
A923	RH		1990	08	18.69271	00	02	50.54	-08	47	46.6		400
A923	RH		1990	08	18.70521	00	02	49.98	-08	47	44.7		400
A923	RH		1990	08	30.60972	23	53	21.75	-08	19	35.2	16.0	400
A923	RH		1990	08	30.62951	23	53	20.72	-08	19	32.8		400
1985	PE2		1988	05	09.51354	15	00	58.58	-02	10	33.0	14.5	400
1985	PE2		1988	05	09.53438	15	00	57.43	-02	10	30.3		400
1987	WR		1990	09	16.65625	00	37	51.80	+08	00	04.0	16.0	400
1987	WR		1990	09	16.66944	00	37	51.24	+08	00	02.5		400
1987	WR		1990	09	16.68611	00	37	50.23	+07	59	55.5		400
1988	PV		1988	10	02.45833	21	27	44.45	-06	23	08.1	16.5	400
1988	PV		1988	10	02.47361	21	27	45.04	-06	23	12.9		400
1990	OM		1990	08	30.62257	23	08	47.96	-09	15	49.3	15.0	400
1990	OM		1990	08	30.63924	23	08	47.30	-09	15	59.5		400
1990	QC1	*	1990	08	18.61250	22	07	58.28	-05	08	51.2	16.0	400
1990	QC1		1990	08	18.62986	22	07	57.23	-05	08	54.9		400
1990	QC1		1990	08	30.57431	21	55	24.48	-05	24	59.2	16.0	400
1990	QC1		1990	08	30.58854	21	55	23.57	-05	25	02.3		400
1990	QC1		1990	08	30.60451	21	55	22.74	-05	25	02.2		400
1990	QC1		1990	09	16.48819	21	41	34.47	-05	53	28.6	16.0	400
1990	QC1		1990	09	16.50625	21	41	33.78	-05	53	34.2		400
1990	QU1		1990	08	30.65590	23	25	08.88	-06	30	29.3	16.0	400
1990	QU1		1990	08	30.67535	23	25	08.05	-06	30	34.2		400
1990	QT3	*	1990	08	30.65590	23	22	46.60	-07	20	25.3	15.5	400
1990	QT3		1990	08	30.67535	23	22	45.67	-07	20	34.0		400
1990	QP5	*	1990	08	30.57431	22	00	13.70	-09	03	00.0	16.5	400
1990	QP5		1990	08	30.58854	22	00	12.90	-09	03	02.9		400
1990	QP5		1990	08	30.60451	22	00	12.05	-09	03	09.8		400
1990	QP5		1990	09	16.52361	21	49	16.93	-11	16	57.1	15.0	400
1990	QP5		1990	09	16.54375	21	49	16.42	-11	17	05.6		400
1990	QQ5	*	1990	08	30.62257	23	14	47.08	-08	02	13.6	16.0	400
1990	QQ5		1990	08	30.63924	23	14	46.21	-08	02	18.8		400
1990	QQ5		1990	09	16.57500	23	02	38.28	-09	18	06.0	16.5	400
1990	QQ5		1990	09	16.59236	23	02	37.29	-09	18	09.2		400
1330			1990	08	30.65590	23	27	16.22	-06	47	31.1	15.0	400
1330			1990	08	30.67535	23	27	15.53	-06	47	41.1		400
1492			1990	09	16.45347	22	32	04.18	-14	02	40.9	16.0	400
1492			1990	09	16.46875	22	32	03.34	-14	02	44.9		400
1492			1990	09	16.49132	22	32	02.54	-14	02	54.0	16.0	400
1492			1990	09	16.50868	22	32	01.42	-14	02	59.4		400
2058			1990	08	30.62257	23	11	22.25	-09	08	12.9	16.0	400
2058			1990	08	30.63924	23	11	21.57	-09	08	19.5		400
2632			1990	08	18.67187	00	03	10.84	-08	57	14.0	16.0	400
2632			1990	08	18.69271	00	03	10.08	-08	57	15.4		400
2632			1990	08	18.70521	00	03	09.68	-08	57	15.7		400
3773			1990	08	30.65590	23	20	40.10	-07	31	14.5	14.5	400
3773			1990	08	30.67535	23	20	39.31	-07	31	20.9		400
4072			1990	08	30.65590	23	22	12.08	-06	37	35.1	16.0	400
4072			1990	08	30.67535	23	22	11.06	-06	37	42.0		400

403 Kani
T. Furuta, Mitsuike 17-2, Kakiya-Cho, Tokai, Aichi-Ken 477, Japan

Observers Y. Mizuno, T. Furuta
Measurer T. Furuta

1990	BF		1990	02	01.55972	07	39	10.6	+24	39	03		403
1990	BF		1990	02	01.57240	07	39	09.9	+24	39	01		403
1990	QF		1990	08	21.56840	22	10	29.4	-11	41	18	15.5	403
1990	QF		1990	08	21.58854	22	10	28.2	-11	41	17		403
1990	QF		1990	08	24.60104	22	07	11.5	-11	44	45		403
1990	QF		1990	08	24.62361	22	07	10.0	-11	44	45		403
1990	QF		1990	08	26.58785	22	05	00.8	-11	46	56		403
1990	QN	*	1990	08	21.55694	21	54	14.88	-06	33	37.0	15.0	403
1990	QN		1990	08	21.57847	21	54	13.90	-06	33	48.0		403
1990	QN		1990	08	24.58993	21	52	08.89	-07	00	30.8		403
1990	QN		1990	08	24.61233	21	52	07.99	-07	00	42.7		403
1990	QN		1990	08	26.58785	21	50	48.13	-07	18	31.9		403
1990	QN		1990	08	26.59792	21	50	47.88	-07	18	37.0		403
1990	QN		1990	08	26.60764	21	50	47.38	-07	18	41.0		403
1990	RA		1990	08	26.61944	22	45	07.7	-12	03	43	15.0	403
1990	RA		1990	08	26.64097	22	45	06.9	-12	03	50		403
1478			1990	08	26.63021	22	37	57.2	-04	13	07	16.0	403
1478			1990	08	26.65174	22	37	56.1	-04	13	08		403
2095			1990	09	18.54566	23	43	41.7	+00	47	17	15.5	403
2095			1990	09	18.57118	23	43	40.41	+00	47	10.5		403

413 Siding Spring
R. H. McNaught, Siding Spring Observatory, Coonabarabran, N.S.W. 2357, Australia
Observers J. A. Dawe, M. Hartley, P. McKenzie, R. H. McNaught, K. S. Russell
Measurer R. H. McNaught
1.2-m U. K. Schmidt Telescope and Uppsala Southern Schmidt

1927	TC		1990	09	10.57159	23	22	50.38	+05	04	16.6		413
1927	TC		1990	09	10.57523	23	22	50.23	+05	04	22.9		413
1981	EF37		1990	08	19.54194	19	42	29.96	-42	37	33.6		413
1981	EF37		1990	08	19.56367	19	42	29.00	-42	37	21.0		413
1982	DB		1990	09	16.60950	22	51	59.42	-04	54	48.6	20 V b	413
1982	DB		1990	09	17.60258	22	50	09.08	-05	04	28.1	20 V	413
1986	VC		1990	08	28.68183	23	37	25.05	-09	53	38.7		413
1986	VC		1990	09	21.60519	23	14	19.64	-10	18	32.1		413
1988	DJ		1979	06	25.60221	19	29	23.25	-12	50	16.9	18.5 F	413
1988	DJ		1979	06	25.64388	19	29	21.42	-12	50	13.5	F	413
1989	CE2		1974	03	23.56674	12	02	38.15	-33	05	06.4	16 V G	413
1989	CE2		1974	03	23.62924	12	02	32.00	-33	05	18.4	G	413
1989	CE2		1979	05	20.35700	10	36	19.04	-17	57	56.7	17 V G	413
1989	CE2		1979	05	20.40214	10	36	20.80	-17	57	54.6	G	413
1989	EG		1990	09	07.41447	22	01	39.90	-06	34	42.9		413
1989	EG		1990	09	07.42402	22	01	39.22	-06	34	46.2		413
1989	EG		1990	09	08.46576	22	00	42.60	-06	39	55.3	G	413
1989	GO		1990	05	29.68263	22	58	22.09	-10	00	59.9	18 V V	413
1989	GO		1990	05	29.72429	22	58	24.10	-10	00	50.7	V	413
1990	KK		1982	07	17.37141	14	52	14.56	-12	06	49.0	17.5V	413
1990	KK		1982	07	17.41308	14	52	15.41	-12	07	28.1		413
1990	OA		1990	08	26.56286	21	16	03.96	-25	41	41.4	F	413
1990	OL		1990	09	10.52890	21	52	10.60	-19	08	08.2		413
1990	PA		1990	08	28.69823	03	07	13.59	+01	28	42.6		413
1990	PA		1990	09	16.76160	03	17	48.63	+01	05	31.4	14.8V	413
1990	QA		1990	08	26.45887	21	09	41.76	-46	58	50.9		413
1990	QA		1990	09	09.49257	20	58	21.20	-45	23	14.4		413
1990	QA		1990	09	19.45367	20	54	11.39	-43	46	20.2		413
1990	QM2		1990	09	22.51897	23	24	15.76	-16	04	53.6	15 V	413

1990	QM2		1990	09	22.57105	23	24	13.54	-16	06	14.7			413
1990	QM2		1990	09	23.66745	23	23	32.53	-16	34	47.1			413
1990	RC	*	1990	09	10.52540	21	42	38.66	-46	59	02.5	17.5V		413
1990	RC		1990	09	10.56707	21	42	36.72	-46	59	11.5			413
1990	RC		1990	09	11.49706	21	41	54.63	-47	02	15.6			413
1990	RC		1990	09	11.54567	21	41	52.44	-47	02	23.4			413
1990	RC		1990	09	16.50071	21	38	32.46	-47	12	53.1			413
1990	RC		1990	09	16.56668	21	38	29.96	-47	13	00.0		p	413
1990	RC		1990	09	17.50215	21	37	57.23	-47	13	53.9			413
1990	RC		1990	09	17.54729	21	37	55.66	-47	13	56.2			413
1990	SA	*	1990	09	16.60950	23	05	05.25	-03	53	31.8	16 V	b	413
1990	SA		1990	09	17.53346	23	05	20.69	-05	29	29.2			413
1990	SA		1990	09	17.57419	23	05	21.08	-05	33	36.3			413
1990	SA		1990	09	17.60258	23	05	21.31	-05	36	30.5			413
1990	SA		1990	09	18.45470	23	05	36.52	-07	01	44.6			413
1990	SA		1990	09	18.45959	23	05	36.57	-07	02	09.6		D	413
1990	SA		1990	09	19.41024	23	05	52.91	-08	33	50.7			413
1990	SA		1990	09	19.41319	23	05	52.96	-08	34	07.1			413
1990	SA		1990	09	21.58125	23	06	30.24	-11	49	22.1	16.5V	V	413
1990	SA		1990	09	21.58524	23	06	30.29	-11	49	44.9		V	413
1990	SA		1990	09	22.51897	23	06	48.46	-13	07	58.8		E	413
1990	SA		1990	09	22.57105	23	06	49.02	-13	12	12.4		E	413
1990	SE	*	1990	09	17.62057	00	38	06.74	-24	36	53.4	17 V		413
1990	SE		1990	09	17.66571	00	38	04.78	-24	38	15.7		F	413
1990	SE		1990	09	21.58057	00	35	31.27	-26	31	43.1		E	413
1990	SE		1990	09	21.62571	00	35	29.18	-26	32	59.1		E	413
1990	SF	*	1990	09	17.62057	00	54	29.78	-25	45	19.5	17 V		413
1990	SF		1990	09	17.66571	00	54	27.88	-25	45	29.0			413
1990	SF		1990	09	21.58057	00	51	24.63	-25	58	47.8			413
1990	SF		1990	09	21.62571	00	51	22.35	-25	58	54.8			413
1990	SG	*	1990	09	17.62057	00	59	07.90	-25	18	14.3	17 V		413
1990	SG		1990	09	17.66571	00	59	05.85	-25	18	25.0			413
1990	SG		1990	09	21.58057	00	55	59.29	-25	34	09.9			413
1990	SG		1990	09	21.62571	00	55	57.06	-25	34	19.6			413
1990	SH	*	1990	09	17.66571	00	49	07.40	-24	59	40.1	18 V	V	413
1990	SH		1990	09	21.58057	00	46	27.98	-25	26	22.0			413
1990	SH		1990	09	21.62571	00	46	26.00	-25	26	38.4			413
1990	SJ	*	1990	09	20.47388	21	33	13.14	-37	09	41.6	16 V		413
1990	SJ		1990	09	20.51554	21	33	13.33	-37	08	59.4			413
1990	SJ		1990	09	21.59417	21	33	26.20	-36	50	12.3			413
1990	SK	*	1990	09	20.53620	23	42	40.26	-54	46	24.9	16 V		413
1990	SK		1990	09	20.57787	23	42	35.62	-54	45	52.7			413
1990	SK		1990	09	21.61736	23	40	43.83	-54	31	58.2			413
1990	SL	*	1990	09	20.53620	23	56	37.23	-54	21	53.4	16 V		413
1990	SL		1990	09	20.57787	23	56	34.04	-54	21	34.4			413
1990	SL		1990	09	21.61736	23	55	15.97	-54	12	52.9			413
1990	SM	*	1990	09	22.38889	20	08	21.03	-52	10	33.9	15.5V		413
1990	SM		1990	09	22.42244	20	08	57.27	-52	07	51.4			413
1990	SM		1990	09	22.45050	20	09	27.44	-52	05	33.2			413
1990	SM		1990	09	23.64155	20	29	25.96	-50	26	28.3			413
1990	SM		1990	09	24.39630	20	40	24.01	-49	24	09.2	14 V		413
1990	SM		1990	09	24.39792	20	40	25.41	-49	24	01.2			413
1990	SM		1990	09	24.61797	20	43	18.91	-49	05	44.4	14 V		413
1990	SP		1990	08	18.74266	01	11	21.38	-32	03	25.0		F	413
1990	SP		1990	08	18.76968	01	11	22.68	-32	03	55.4		F	413
1990	SP		1990	09	10.71742	01	21	12.71	-41	09	02.5		V	413
1990	SP	*	1990	09	20.66399	01	13	42.34	-46	05	49.8	16 V		413
1990	SP		1990	09	21.78742	01	12	06.75	-46	40	44.6			413
1990	SP		1990	09	22.74162	01	10	39.24	-47	10	44.9			413

1990 SP	1990 09 24.62750	01 07 23.40	-48 10 20.8				413
715	1990 08 19.54194	19 38 16.54	-42 09 54.2				413
715	1990 08 19.56367	19 38 15.71	-42 09 50.4				413
768	1990 08 19.54194	19 45 15.54	-43 34 20.2				413
768	1990 08 19.56367	19 45 14.49	-43 34 17.1				413
1627	1990 08 26.39016	16 26 23.26	-21 06 16.0				413
1628	1990 09 08.42012	18 35 28.67	-01 59 39.9				413
1951	1990 08 26.39734	19 50 13.87	-49 16 09.8				413
3040	1990 08 26.59515	21 37 16.82	-22 33 41.5				413
3753	1990 09 22.76795	03 59 08.79	-27 10 30.0				413
3753	1990 09 23.71431	04 00 05.32	-27 49 47.5				413
3753	1990 09 23.76639	04 00 08.06	-27 51 57.1				413

474 Mount John
A. C. Gilmore, P.O. Box 57, Lake Tekapo, New Zealand
Observer A. C. Gilmore
Measurer P. M. Kilmartin
0.6-m f/14 Cassegrain reflector

1990 SA	1990 09 18.57907	23 05 37.15	-07 13 51.6				474
1990 SA	1990 09 18.58995	23 05 37.20	-07 14 54.3				474
1990 SA	1990 09 19.62747	23 05 54.66	-08 54 12.1				474
1990 SA	1990 09 19.63597	23 05 54.74	-08 54 59.6				474

493 Calar Alto
J. M. Baur, Via Zara 20, I-33083 Chions, Italy
Observer K. Birkle
Measurer J. M. Baur
0.8-m f/3 Schmidt

1987 WA	1990 06 19.89954	15 21 05.12	-18 48 04.9			17.7	493
1987 WA	1990 06 19.92049	15 21 04.38	-18 48 04.6				493
1987 WA	1990 06 19.94143	15 21 03.62	-18 48 04.3				493
1989 CT	1990 08 15.91424	19 48 14.69	-19 25 45.3			16.5	493
1989 CT	1990 08 15.93995	19 48 13.66	-19 25 47.6				493
1989 CT	1990 08 15.99068	19 48 11.56	-19 25 52.7				493
1989 CT	1990 08 16.92055	19 47 37.17	-19 27 10.2				493
1989 CT	1990 08 16.93792	19 47 36.54	-19 27 11.8				493
1989 CT	1990 08 16.95528	19 47 35.89	-19 27 13.3				493

511 Haute Provence
E. W. Elst, Royal Observatory, B-1180 Brussels, Belgium
Observers E. W. Elst, G. Traversa
Measurer E. W. Elst
0.6-m Schmidt

1982 UU5	1990 08 22.08368	23 26 30.84	+03 35 09.8			17.8	511
1982 UU5	1990 08 22.10729	23 26 29.81	+03 35 05.5				511
1982 UU5	1990 08 24.07500	23 25 07.71	+03 30 10.3				511
1986 RU4	1989 09 02.83125	17 45 48.76	-20 32 32.7			18.0	511
1986 RU4	1989 09 03.82847	17 46 19.57	-20 30 46.1				511
1986 RU4	1990 08 17.05139	23 56 28.42	+16 57 15.4			16.0	511
1986 RU4	1990 08 17.06806	23 56 27.88	+16 57 20.2				511
1986 RU4	1990 08 22.01458	23 53 49.85	+17 04 59.1				511
1986 RU4	1990 08 22.03542	23 53 49.22	+17 05 02.3				511
1986 RU4	1990 08 22.05903	23 53 48.28	+17 05 02.2				511
1988 CJ5	1990 08 16.04028	23 20 15.60	+03 22 59.8				511
1988 CJ5	1990 08 17.08958	23 19 52.11	+03 14 33.0				511
1988 CJ5	1990 08 17.11042	23 19 51.68	+03 14 23.7				511
1988 CJ5	1990 08 21.03889	23 18 11.52	+02 39 58.0			17.4	511
1988 CJ5	1990 08 21.05972	23 18 10.99	+02 39 47.1				511
1988 CJ5	1990 08 28.08889	23 14 28.04	+01 28 22.3				511

1990	OY3		1990	08	15.96875	21	45	12.55	-13	47	18.5	511
1990	OY3		1990	08	15.98750	21	45	11.32	-13	47	18.9	17.5 511
1990	OY3		1990	08	16.94722	21	44	13.06	-13	47	47.8	511
1990	OY3		1990	08	20.94583	21	40	10.08	-13	49	38.1	511
1990	OY3		1990	08	20.96667	21	40	08.97	-13	49	39.8	511
1990	OY3		1990	08	20.99201	21	40	07.17	-13	49	40.3	511
1990	OY3		1990	08	21.01111	21	40	06.14	-13	49	39.2	511
1990	OY3		1990	08	22.95069	21	38	09.73	-13	50	24.6	511
1990	OY3		1990	08	22.97361	21	38	08.47	-13	50	24.1	511
1990	PF	*	1990	08	15.96875	21	47	14.70	-13	25	13.8	511
1990	PF		1990	08	15.98750	21	47	13.79	-13	25	20.9	17.5 511
1990	PF		1990	08	16.94722	21	46	28.25	-13	30	08.4	511
1990	PF		1990	08	20.94583	21	43	18.55	-13	49	59.6	511
1990	PF		1990	08	20.96667	21	43	17.63	-13	50	06.6	511
1990	PF		1990	08	20.99201	21	43	16.31	-13	50	13.8	511
1990	PF		1990	08	21.01111	21	43	15.54	-13	50	18.6	511
1990	PF		1990	08	22.95069	21	41	44.30	-13	59	51.0	511
1990	PF		1990	08	22.97361	21	41	43.28	-13	59	58.4	511
1990	QY		1990	08	16.04028	23	18	03.02	+03	32	20.1	511
1990	QY		1990	08	17.08958	23	17	29.78	+03	27	30.3	511
1990	QY		1990	08	17.11042	23	17	29.24	+03	27	25.6	511
1990	QY	*	1990	08	21.03889	23	15	15.42	+03	07	26.4	17.8 511
1990	QY		1990	08	21.05972	23	15	14.79	+03	07	19.1	511
1990	QY		1990	08	28.08889	23	10	44.26	+02	25	12.3	511
1990	QZ		1990	08	17.08958	23	19	13.49	+04	50	18.4	511
1990	QZ		1990	08	17.11042	23	19	12.89	+04	50	07.7	511
1990	QZ	*	1990	08	21.03889	23	17	16.86	+04	16	51.8	17.6 511
1990	QZ		1990	08	21.05972	23	17	16.29	+04	16	42.3	511
1990	QZ		1990	08	28.08889	23	13	19.95	+03	10	28.3	511
1990	QA1		1990	08	17.08958	23	26	11.71	+02	53	34.5	511
1990	QA1		1990	08	17.11042	23	26	11.14	+02	53	32.5	511
1990	QA1	*	1990	08	21.03889	23	23	51.34	+02	42	36.0	17.7 511
1990	QA1		1990	08	21.05972	23	23	50.76	+02	42	32.4	511
1990	QA1		1990	08	28.08889	23	18	47.11	+02	13	46.3	511
1990	QB1	*	1990	08	22.08368	23	32	49.15	+04	37	39.3	18.0 511
1990	QB1		1990	08	22.10729	23	32	48.33	+04	37	31.8	511
1990	QB1		1990	08	24.07500	23	31	32.73	+04	27	44.5	511
20			1990	08	15.96875	21	54	38.70	-11	38	49.6	511
20			1990	08	15.98750	21	54	37.63	-11	38	55.0	12.0 511
20			1990	08	16.94722	21	53	43.86	-11	43	44.3	511
20			1990	08	20.94583	21	49	57.33	-12	04	04.2	511
20			1990	08	20.96667	21	49	56.05	-12	04	11.1	511
20			1990	08	20.99201	21	49	54.83	-12	04	17.9	511
20			1990	08	21.01111	21	49	53.61	-12	04	24.0	511
20			1990	08	22.95069	21	48	03.64	-12	14	13.4	511
20			1990	08	22.97361	21	48	02.40	-12	14	20.7	511
28			1990	08	15.96875	21	49	50.68	-13	11	47.9	511
28			1990	08	15.98750	21	49	49.79	-13	11	57.3	14.0 511
28			1990	08	16.94722	21	49	04.57	-13	18	11.4	511
28			1990	08	20.94583	21	45	55.38	-13	44	21.2	511
28			1990	08	20.96667	21	45	54.43	-13	44	30.0	511
28			1990	08	20.99201	21	45	53.21	-13	44	39.5	511
28			1990	08	21.01111	21	45	52.27	-13	44	46.6	511
28			1990	08	22.95069	21	44	20.73	-13	57	21.2	511
28			1990	08	22.97361	21	44	19.68	-13	57	31.5	511
58			1990	08	20.94583	21	51	26.08	-10	54	22.2	511
58			1990	08	20.96667	21	51	25.07	-10	54	30.3	511
58			1990	08	20.99201	21	51	23.67	-10	54	37.1	511
58			1990	08	21.01111	21	51	22.65	-10	54	44.3	511

58	1990	08	22.95069	21	49	48.26	-11	06	39.1	15.5	511
58	1990	08	22.97361	21	49	47.11	-11	06	48.3		511
707	1990	08	17.08958	23	26	55.12	+03	53	04.1		511
707	1990	08	17.11042	23	26	54.53	+03	53	04.5		511
707	1990	08	21.03889	23	24	31.08	+03	53	43.8	16.0	511
707	1990	08	21.05972	23	24	30.24	+03	53	43.7		511
707	1990	08	22.08368	23	23	48.56	+03	53	15.7	16.0	511
707	1990	08	22.10729	23	23	47.49	+03	53	15.5		511
707	1990	08	24.07500	23	22	22.95	+03	51	42.1		511
823	1990	08	16.04028	23	19	36.80	+02	12	32.3		511
823	1990	08	17.08958	23	18	54.32	+02	09	57.9		511
823	1990	08	17.11042	23	18	53.64	+02	09	55.8		511
823	1990	08	21.03889	23	16	01.72	+01	58	14.2	16.5	511
823	1990	08	21.05972	23	16	00.81	+01	58	09.8		511
823	1990	08	28.08889	23	10	07.75	+01	30	00.0		511
873	1990	08	15.96875	21	50	46.94	-12	06	04.3		511
873	1990	08	15.98750	21	50	45.92	-12	06	13.5	16.2	511
873	1990	08	16.94722	21	49	58.03	-12	12	57.8		511
873	1990	08	20.94583	21	46	38.76	-12	40	58.4		511
873	1990	08	20.96667	21	46	37.81	-12	41	07.0		511
873	1990	08	20.99201	21	46	36.39	-12	41	18.0		511
873	1990	08	21.01111	21	46	35.50	-12	41	25.2		511
873	1990	08	22.95069	21	44	59.85	-12	54	51.5		511
873	1990	08	22.97361	21	44	58.71	-12	55	00.5		511
937	1990	08	22.08368	23	23	03.72	+04	48	16.9	15.0	511
937	1990	08	22.10729	23	23	02.83	+04	48	13.7		511
937	1990	08	24.07500	23	21	53.15	+04	43	32.4		511
949	1990	08	15.96875	21	51	20.52	-11	53	15.8		511
949	1990	08	15.98750	21	51	19.51	-11	53	17.8	16.0	511
949	1990	08	16.94722	21	50	28.92	-11	54	53.3		511
949	1990	08	20.94583	21	46	57.95	-12	01	29.7		511
949	1990	08	20.96667	21	46	56.90	-12	01	31.9		511
949	1990	08	20.99201	21	46	55.58	-12	01	35.2		511
949	1990	08	21.01111	21	46	54.57	-12	01	36.7		511
949	1990	08	22.95069	21	45	13.21	-12	04	47.2		511
949	1990	08	22.97361	21	45	12.08	-12	04	48.8		511
1068	1990	08	15.96875	21	46	55.50	-12	35	22.4		511
1068	1990	08	15.98750	21	46	54.50	-12	35	26.8	16.8	511
1068	1990	08	16.94722	21	46	05.18	-12	37	58.1		511
1068	1990	08	20.94583	21	42	40.16	-12	48	20.3		511
1068	1990	08	20.96667	21	42	39.18	-12	48	23.0		511
1068	1990	08	20.99201	21	42	37.79	-12	48	26.7		511
1068	1990	08	21.01111	21	42	36.85	-12	48	29.0		511
1068	1990	08	22.95069	21	40	58.51	-12	53	28.1		511
1068	1990	08	22.97361	21	40	57.29	-12	53	31.2		511
1280	1990	08	17.08958	23	26	16.07	+03	59	20.1		511
1280	1990	08	17.11042	23	26	15.40	+03	59	17.3		511
1280	1990	08	21.03889	23	24	07.20	+03	55	03.9	16.6	511
1280	1990	08	21.05972	23	24	06.43	+03	55	02.3		511
1280	1990	08	22.08368	23	23	30.86	+03	53	35.1	16.5	511
1280	1990	08	22.10729	23	23	29.96	+03	53	33.8		511
1280	1990	08	24.07500	23	22	19.53	+03	50	27.3		511
1560	1990	08	22.08368	23	21	15.13	+05	25	56.6	16.0	511
1560	1990	08	22.10729	23	21	14.16	+05	25	57.9		511
1560	1990	08	24.07500	23	19	58.53	+05	27	10.4		511
1739	1990	08	21.03889	23	23	32.28	+00	45	00.8	17.2	511
1739	1990	08	21.05972	23	23	31.63	+00	44	54.4		511
2192	1990	08	28.08889	23	06	29.80	+04	06	37.5		511

2310	1990	08	20.94583	21 46 50.56	-14 49 03.0				511
2310	1990	08	20.96667	21 46 49.76	-14 49 08.7				511
2310	1990	08	20.99201	21 46 48.28	-14 49 16.1		18.0		511
2310	1990	08	21.01111	21 46 47.65	-14 49 19.5				511
2647	1990	08	16.04028	23 23 49.46	+01 50 07.3				511
2647	1990	08	17.08958	23 23 12.29	+01 49 49.7				511
2647	1990	08	17.11042	23 23 11.68	+01 49 50.5				511
2647	1990	08	21.03889	23 20 37.04	+01 46 37.5		17.0		511
2647	1990	08	21.05972	23 20 36.20	+01 46 35.8				511
2647	1990	08	28.08889	23 15 03.48	+01 33 15.7				511
3791	1990	08	15.96875	21 39 38.27	-14 16 51.0				511
3791	1990	08	15.98750	21 39 37.38	-14 16 53.5		17.6		511
4114	1990	08	15.96875	21 48 24.08	-12 58 23.4				511
4114	1990	08	15.98750	21 48 22.89	-12 58 23.5		17.2		511
4114	1990	08	16.94722	21 47 25.60	-12 58 10.1				511
4114	1990	08	20.94583	21 43 24.99	-12 57 14.3				511
4114	1990	08	20.96667	21 43 23.86	-12 57 15.3				511
4114	1990	08	20.99201	21 43 22.12	-12 57 14.4				511
4114	1990	08	21.01111	21 43 21.01	-12 57 13.5				511
4114	1990	08	22.95069	21 41 24.69	-12 56 41.2				511
4114	1990	08	22.97361	21 41 23.30	-12 56 41.1				511

552 San Vittore
E. Colombini, Via S. Vittore 44, I-40136 Bologna, Italy
Observers C. Vacchi, G. Sassi, E. Colombini, V. Goretti, R. di Luca
Measurers C. Vacchi, V. Goretti, E. Colombini
AGK3, SAOC
0.25-m f/2.5 Schmidt and (1) 0.45-m f/5 reflector

1605	1990	08	24.90347	22 12 59.74	-05 01 37.0		15.0		552
1605	1990	08	24.92986	22 12 58.46	-05 01 49.1				552
1605	1990	08	24.96007	22 12 57.08	-05 02 01.3				552
4070	1990	08	24.90347	22 08 01.08	-03 19 21.0		15.5		552
4070	1990	08	24.92986	22 07 59.63	-03 19 26.2				552
4070	1990	08	24.96007	22 07 57.78	-03 19 34.7				552
4070	1990	08	31.87847	22 01 37.58	-03 51 10.5		16.0	1	552
4070	1990	08	31.89444	22 01 36.56	-03 51 15.8			1	552

553 Chorzow
I. Wlodarczyk, Planetarium and Astronomical Observatory,
PL-41501 Chorzow 1 s.p.10, Poland
Observers I. Wlodarczyk, M. Szczepanski, T. Firszt

18	1990	03	19.90098	10 56 18.05	+11 53 22.2				553
18	1990	03	19.91557	10 56 17.34	+11 53 29.4				553
18	1990	03	19.92876	10 56 16.73	+11 53 36.1				553
18	1990	03	20.92043	10 55 27.67	+12 01 08.3				553
18	1990	03	20.93447	10 55 26.90	+12 01 13.8				553
18	1990	03	20.94800	10 55 26.20	+12 01 20.4				553
18	1990	03	24.90830	10 52 19.59	+12 29 51.2				553
18	1990	03	24.93413	10 52 18.40	+12 30 01.6				553
18	1990	03	24.96086	10 52 17.10	+12 30 12.5				553
18	1990	03	24.98858	10 52 15.90	+12 30 23.2				553
18	1990	03	24.99987	10 52 15.34	+12 30 27.7				553
18	1990	04	02.89869	10 46 21.97	+13 23 33.3				553
18	1990	04	02.91814	10 46 21.08	+13 23 39.6				553
18	1990	04	02.93978	10 46 20.43	+13 23 46.0				553
18	1990	04	10.80124	10 42 38.33	+13 57 19.5				553
18	1990	04	10.82902	10 42 37.60	+13 57 22.5				553
18	1990	04	10.86480	10 42 36.44	+13 57 33.3				553

565 Bassano Bresciano
U. Quadri, Osservatorio di Bassano Bresciano, Via S. Michele 4,
I-25020 Bassano Bresciano (Brescia), Italy
Observers U. Quadri, L. Strabla
0.3-0.4-m f/3.3 Schmidt
AGK3, SAOC

286	1990 04 16.84536	12 59 23.21	+13 16 46.0			565
286	1990 04 16.88119	12 59 21.78	+13 16 58.2			565
2443	1990 04 16.84536	13 05 47.40	+11 22 07.8			565
2443	1990 04 16.88119	13 05 45.86	+11 22 14.4			565

568 Mauna Kea Observatory
D. J. Tholen, Institute for Astronomy, 2680 Woodlawn Drive,
Honolulu, HI 96822, U.S.A.
Observers D. J. Tholen, J. Spencer
2.24-m and IRTF telescope encoders
AGK3, SAOC, PPM

1927 TC	1990 09 23.49258	23 18 37.35	+10 48 11.9		13.0V	568
1927 TC	1990 09 24.51980	23 18 23.70	+11 11 08.4		13.0V	568
1990 MB	1990 08 22.43624	17 00 12.40	+06 52 30.8		18.7V	568
1990 SA	1990 09 23.42686	23 07 05.86	-14 21 02.6		16.5V	568
1990 SA	1990 09 24.44769	23 07 26.18	-15 39 01.7		16.5V	568
1990 SB	1990 09 23.54825	01 31 06.28	+09 03 25.6		15.3V	568
1990 SB	1990 09 23.61455	01 31 01.52	+09 01 44.4		15.3V	568
1990 SB	1990 09 24.56291	01 29 56.50	+08 37 41.3		15.4V	568
944	1990 09 23.59426	01 31 07.01	-03 39 47.6		14.5V	568

573 Eldagsen
W. Bonk, Nordstrasse 33, D-3257 Springe 3, Federal Republic of Germany
AGK3

176	1990 08 23.86163	23 28 29.07	+16 41 51.1			573
176	1990 08 23.86950	23 28 28.95	+16 41 48.5			573
790	1990 08 23.84398	22 57 37.42	+25 06 41.2			573
790	1990 08 23.85347	22 57 37.04	+25 06 41.0			573

589 Santa Lucia Stroncone
A. Vagnozzi, Santa Lucia 68, I-05039 Stroncone (Terni), Italy
Observers A. Vagnozzi, G. C. Morando, S. Casulli, R. Castellani
0.5-m f/7.5 Ritchey-Chretien
SAOC

1990 KA	1990 05 29.87083	15 15 36.22	+06 45 06.5			589
1990 KA	1990 05 29.87777	15 15 36.69	+06 44 51.9			589
1990 KA	1990 05 29.88472	15 15 37.30	+06 44 37.9			589
1990 KA	1990 05 29.92153	15 15 37.66	+06 43 51.3			589
1990 KA	1990 05 29.92847	15 15 38.24	+06 43 39.4			589
1990 KA	1990 05 29.93542	15 15 39.04	+06 43 26.0			589
1990 KA	1990 06 24.89583	15 48 25.09	-08 14 15.6			589
1990 KA	1990 06 24.90278	15 48 25.95	-08 14 29.9			589
1990 KA	1990 06 24.90972	15 48 26.74	-08 14 42.7			589
1990 KA	1990 06 24.96944	15 48 32.38	-08 17 01.9			589
1990 KA	1990 06 24.97639	15 48 33.05	-08 17 11.7			589
1990 KA	1990 06 24.98333	15 48 33.72	-08 17 22.0			589
4201	1990 06 26.88264	19 15 19.63	-11 42 03.6			589
4201	1990 06 26.89653	19 15 19.43	-11 42 01.7			589
4201	1990 06 26.94791	19 15 16.90	-11 41 55.2			589
4201	1990 06 26.96180	19 15 16.42	-11 41 51.4			589
4509	1990 06 20.90694	18 51 17.45	-04 40 43.0			589
4509	1990 06 22.99167	18 49 38.40	-04 37 25.7			589
4509	1990 06 22.99861	18 49 38.15	-04 37 22.1			589

4509	1990 06 23.00556	18 49 37.76	-04 37 18.1		589
4509	1990 06 24.92430	18 48 03.88	-04 35 10.5		589
4509	1990 06 24.93125	18 48 03.73	-04 35 08.8		589
4509	1990 06 24.93819	18 48 03.55	-04 35 07.4		589

591 Resse Observatory
N. Ehring, Wiesenstrasse 7, D-3002 Wedemark 15, Federal Republic of Germany

176	1990 08 25.91983	23 27 30.54	+16 28 39.5		591
176	1990 08 25.93321	23 27 30.14	+16 28 34.1		591
608	1990 08 26.96802	23 27 09.23	+09 15 38.8		591
608	1990 08 26.97682	23 27 08.85	+09 15 38.8		591
862	1990 08 25.88780	22 55 01.36	+09 05 45.1		591
862	1990 08 25.90122	22 55 00.65	+09 05 45.5		591
880	1990 08 23.91918	22 35 08.77	+20 28 33.3		591
880	1990 08 23.93218	22 35 08.19	+20 28 36.2		591
880	1990 08 26.92431	22 32 57.95	+20 37 36.8		591
880	1990 08 26.93310	22 32 57.54	+20 37 38.1		591
937	1990 08 23.94492	23 21 58.31	+04 43 52.4		591
937	1990 08 23.95869	23 21 57.77	+04 43 50.2		591
1177	1990 08 23.89358	21 36 47.99	+07 50 09.1		591
1177	1990 08 23.91134	21 36 47.22	+07 50 05.7		591
1177	1990 08 26.88804	21 34 42.25	+07 39 48.8		591
1177	1990 08 26.90156	21 34 41.68	+07 39 45.8		591
3581	1990 08 25.85972	22 01 36.42	+46 06 15.7		591
3581	1990 08 25.87293	22 01 36.31	+46 06 08.1		591

592 Sollingen
J. Jahn, Neustadter Strasse 11, D-3123 Bodenteich, Federal Republic of Germany
Observer B. Koch
0.20-m reflector
Long. and Parallax 7.01, -268, -330 (see MPC 16637)
From Minor Planet Bulletin

1989 PB	1989 08 22.91806	00 25 24.02	+31 50 26.8	11.5	592
1989 PB	1989 08 22.92153	00 25 27.31	+31 52 46.7	11.5	592
1989 PB	1989 08 22.92431	00 25 30.54	+31 54 51.1	11.5	592

593 Monte Argentario
M. Calabresi, Via Raita 11, I-00136 Rome, Italy
0.075-m f/9.2 lens
Long. and Parallax 11.17, -315, -286 (see MPC 16637)
From Minor Planet Bulletin

521	1989 10 21.87708	01 10 01.0	-13 07 45		593
521	1989 10 22.85556	01 09 14.8	-13 06 46		593

594 Monte Autore
M. Calabresi, Via Raita 11, I-00136 Rome, Italy
0.075-m f/9.2 lens
Long. and Parallax 13.20, -318, -284 (see MPC 16637)
From Minor Planet Bulletin

216	1989 07 28.95000	20 09 52.6	+01 36 03		594
216	1989 07 28.98263	20 09 51.0	+01 35 56		594
1917	1989 10 06.84791	20 53 32.2	-12 09 20		594
1917	1989 10 06.87152	20 53 39.2	-12 13 30		594

657 Victoria, Climenhaga Observatory
J. B. Tatum, Dept. of Physics, University of Victoria, P.O. Box 1700, Victoria, BC V8W 2Y2, Canada
Observers J. B. Tatum, D. D. Balam

1927	TC	1990	08	24.32924	23	26	30.50	-04 15 53.7	657
1927	TC	1990	08	24.35215	23	26	30.40	-04 15 09.3	657
1927	TC	1990	09	03.28646	23	25	09.35	+01 13 30.6	657
1985	PG1	1990	08	28.23698	22	20	45.41	-00 35 47.5	657
1985	PG1	1990	08	28.29799	22	20	42.74	-00 36 09.8	657
1986	RH12	1990	08	28.35354	23	55	43.12	+16 12 41.1	657
1986	RH12	1990	08	28.39799	23	55	42.06	+16 12 24.0	657
1986	RH12	1990	09	11.18549	23	48	51.11	+14 14 53.6	657
1986	RH12	1990	09	11.21778	23	48	49.99	+14 14 32.1	657
1986	RH12	1990	09	14.22229	23	46	58.05	+13 39 58.0	657
1986	RH12	1990	09	14.25632	23	46	56.72	+13 39 34.0	657
1986	WM3	1990	08	28.32924	23	59	05.52	+04 35 16.4	657
1986	WM3	1990	08	28.38340	23	59	02.73	+04 35 21.6	657
1987	UU2	1990	07	19.31118	20	31	25.82	-16 21 30.5	657
1987	UU2	1990	07	19.33757	20	31	24.27	-16 21 33.7	657
1987	UU2	1990	07	19.35979	20	31	22.91	-16 21 40.1	657
1988	AW1	1990	07	20.32160	21	36	52.91	-14 22 51.5	657
1988	AW1	1990	07	20.36535	21	36	50.91	-14 22 43.5	657
1988	CJ5	1990	08	28.31674	23	14	20.25	+01 25 50.1	657
1988	CJ5	1990	08	28.37507	23	14	18.05	+01 25 10.4	657
1990	SA	1990	09	14.23062	23	04	29.28	+00 27 33.8	657
1990	SA	1990	09	14.26326	23	04	29.13	+00 23 45.6	657
1990	SA	1990	09	20.20076	23	06	06.25	-09 47 44.8	657
1990	SA	1990	09	20.21326	23	06	06.22	-09 48 53.1	657
1990	SA	1990	09	21.24833	23	06	24.60	-11 21 08.8	657
1990	SA	1990	09	21.26361	23	06	24.81	-11 22 28.2	657
1990	SB	1990	09	20.26812	01	34	44.73	+10 26 26.0	657
1990	SB	1990	09	20.28479	01	34	43.58	+10 26 00.2	657
1990	SB	1990	09	23.31979	01	31	22.38	+09 09 06.0	657
1990	SB	1990	09	25.28062	01	29	07.44	+08 19 27.9	657
1990	SB	1990	09	25.29451	01	29	06.48	+08 19 06.5	657
177		1990	02	23.37993	12	25	34.30	-03 08 11.7	657
177		1990	02	23.41465	12	25	33.01	-03 08 05.6	657
823		1990	08	28.31674	23	09	55.75	+01 28 53.7	657
823		1990	08	28.37507	23	09	52.45	+01 28 37.0	657
1409		1990	02	23.37993	12	23	38.89	-02 51 57.6	657
1409		1990	02	23.41465	12	23	37.95	-02 51 49.0	657
1551		1990	02	23.42299	12	19	11.89	+03 42 41.6	657
2257		1990	08	28.23698	22	15	49.88	+00 14 45.9	657
2257		1990	08	28.29799	22	15	46.82	+00 14 27.4	657
2647		1990	08	28.31674	23	14	51.99	+01 32 38.3	657
2647		1990	08	28.37507	23	14	48.77	+01 32 29.6	657
2741		1990	02	23.38826	12	17	11.87	+04 23 48.8	657
2741		1990	02	23.42299	12	17	11.16	+04 24 08.1	657
4105		1990	08	25.29757	22	22	25.31	-01 17 07.9	657
4105		1990	08	25.34583	22	22	22.96	-01 17 22.4	657
4105		1990	08	28.23698	22	20	04.70	-01 37 19.7	657
4105		1990	08	28.29799	22	20	01.70	-01 37 44.5	657

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9 = 3 + 6
Observers J. A. Brown (3, S), T. Gehrels (4, L), J. Gibson (1, C), E. Helin (2, S), H. E. Holt (3, S), H. R. Holt (3, S), K. Lawrence (2, S), D. H. Levy (3, S), J. Michaud (2, S), C. M. Olmstead (3, S), B. Roman (2, S), S. Staples (2, C), C. Tinney (2, C)
Measurers J. Alu (2), E. Bowell (6), J. Gibson (1), K. Lawrence (2), J. Michaud (2), C. M. Olmstead (3), B. Roman (2), C. Tinney (2), C. J. van Houten (4), I. van Houten-Groeneveld (4), A. Wisse (4)
1.5-m reflector + CCD (C), 1.2-m (L) and 0.46-m (S) Schmidt telescopes

1927	TC	1990	08	20.40880	23	26	08.59	-06	23	32.8	14.0	2 675
1927	TC	1990	08	20.43559	23	26	08.61	-06	22	40.7		2 675
1927	TC	1990	08	21.42934	23	26	17.34	-05	50	39.1		2 675
1927	TC	1990	08	21.45833	23	26	17.25	-05	49	39.4		2 675
1927	TC	1990	08	22.40318	23	26	23.90	-05	18	54.9	13.5	9 675
1927	TC	1990	08	22.44363	23	26	23.70	-05	17	35.9		9 675
1927	TC	1990	08	28.40590	23	26	17.14	-02	00	47.0	13.0	9 675
1927	TC	1990	08	28.43906	23	26	16.61	-01	59	40.8		9 675
1957	UK1	1990	08	22.39288	22	43	19.13	-06	51	39.2	17.0	9 675
1957	UK1	1990	08	22.43351	22	43	17.14	-06	51	52.1		9 675
1957	UK1	1990	08	29.40694	22	37	55.53	-07	27	36.2	17.2	9 675
1957	UK1	1990	08	29.44375	22	37	53.78	-07	27	46.8		9 675
1975	BF	1990	08	24.45052	00	54	52.36	+05	41	10.3	17.5	9 675
1975	BF	1990	08	24.48646	00	54	51.85	+05	41	06.8		9 675
1976	GO3	1990	08	23.43941	23	13	15.03	-07	43	07.4	17.5	9 675
1976	GO3	1990	08	23.47517	23	13	13.42	-07	43	21.4		9 675
1976	GO3	1990	08	27.37031	23	10	13.48	-08	05	15.1	17.8	9 675
1976	GO3	1990	08	27.40330	23	10	11.81	-08	05	24.6		9 675
1976	GM7	1990	08	24.45052	01	02	09.42	+03	57	47.4	17.5	9 675
1976	GM7	1990	08	24.48646	01	02	08.88	+03	57	36.4		9 675
1976	WC	1990	08	27.37031	22	55	44.83	-03	50	09.9	18.0	9 675
1976	WC	1990	08	27.40330	22	55	43.08	-03	50	37.8		9 675
1977	RB7	1990	08	24.43177	23	52	06.85	+02	06	45.8	17.5	9 675
1977	RB7	1990	08	24.46788	23	52	05.47	+02	06	39.0		9 675
1977	RB7	1990	08	29.46160	23	48	57.60	+01	49	34.1	17.5	9 675
1977	RB7	1990	08	29.49927	23	48	56.25	+01	49	27.2		9 675
1979	SO11	1990	08	24.45052	00	45	18.31	+04	06	44.2	17.2	9 675
1979	SO11	1990	08	24.48646	00	45	17.83	+04	06	40.6		9 675
1979	SQ11	1990	08	22.44363	23	19	35.83	-05	06	39.2	16.8	9 675
1979	SQ11	1990	08	23.43941	23	19	00.21	-05	10	32.2	17.0	9 675
1979	SQ11	1990	08	23.47517	23	18	58.82	-05	10	41.1		9 675
1979	SQ11	1990	08	27.40330	23	16	30.36	-05	26	45.9		9 675
1979	SQ11	1990	08	28.40590	23	15	50.70	-05	31	03.6	16.8	9 675
1979	SQ11	1990	08	28.43906	23	15	49.32	-05	31	09.9		9 675
1979	WE2	1990	08	22.40318	23	15	45.31	-04	18	42.9	17.0	9 675
1979	WE2	1990	08	22.44363	23	15	43.84	-04	18	55.2		9 675
1979	WE2	1990	08	23.43941	23	15	08.16	-04	23	16.5	17.2	9 675
1979	WE2	1990	08	23.47517	23	15	06.77	-04	23	27.2		9 675
1979	WE2	1990	08	27.37031	23	12	40.35	-04	41	19.2	17.2	9 675
1979	WE2	1990	08	27.40330	23	12	39.01	-04	41	27.1		9 675
1979	WX3	1990	08	29.46160	23	49	40.63	-03	45	58.2	17.0	9 675
1979	WX3	1990	08	29.49927	23	49	39.45	-03	46	08.3		9 675
1980	RJ	1990	08	23.43941	23	19	39.32	-07	57	20.9	16.8	9 675
1980	RJ	1990	08	23.47517	23	19	37.40	-07	57	24.7		9 675
1980	RJ	1990	08	25.35955	23	17	57.15	-08	00	22.4	16.5	9 675
1980	RJ	1990	08	25.39792	23	17	54.91	-08	00	24.5		9 675
1980	RJ	1990	08	27.37031	23	16	04.43	-08	03	43.0	16.8	9 675
1980	RJ	1990	08	27.40330	23	16	02.41	-08	03	43.6		9 675
1981	QB	1989	01	17.45744	11	58	32.32	+00	18	23.1		1 675

1981	QB	1989	01	17.46213	11	58	32.31	+00	18	27.9		1 675
1981	QB	1989	01	17.46752	11	58	32.28	+00	18	33.7		1 675
1981	QB	1989	01	18.47807	11	58	30.51	+00	36	50.6		1 675
1981	QB	1989	01	18.48333	11	58	30.46	+00	36	56.2		1 675
1981	QB	1989	01	18.48910	11	58	30.46	+00	37	02.3		1 675
1981	QB	1989	02	15.47472	11	43	02.03	+11	14	00.6		1 675
1981	QB	1989	02	15.48021	11	43	01.69	+11	14	08.8		1 675
1981	QB	1989	02	15.48538	11	43	01.36	+11	14	17.0		1 675
1981	QB	1989	02	17.41245	11	41	02.70	+12	03	22.7		1 675
1981	QB	1989	02	17.41889	11	41	02.25	+12	03	32.5		1 675
1981	QB	1989	02	17.42567	11	41	01.80	+12	03	42.7		1 675
1981	UT15	1990	08	23.43941	23	09	50.05	-06	37	06.9	17.0	9 675
1981	UT15	1990	08	23.47517	23	09	48.43	-06	37	16.5		9 675
1981	UT15	1990	08	27.37031	23	06	56.04	-06	53	07.7	17.0	9 675
1981	UT15	1990	08	27.40330	23	06	54.46	-06	53	13.5		9 675
1982	FV2	1990	08	23.43941	23	19	37.60	-08	07	20.1	17.8	9 675
1982	FV2	1990	08	23.47517	23	19	36.25	-08	07	31.3		9 675
1982	FV2	1990	08	25.35955	23	18	22.44	-08	16	38.5	17.8	9 675
1982	FV2	1990	08	25.39792	23	18	20.88	-08	16	47.7		9 675
1982	FV2	1990	08	27.37031	23	17	00.82	-08	26	28.2	18.0	9 675
1982	FV2	1990	08	27.40330	23	16	59.51	-08	26	36.7		9 675
1982	UG6	1990	08	22.39288	22	36	15.15	-11	39	18.6	17.2	9 675
1982	UG6	1990	08	22.43351	22	36	12.96	-11	39	31.2		9 675
1982	UG6	1990	08	27.36354	22	31	51.21	-12	05	27.9	17.2	9 675
1982	UG6	1990	08	27.39615	22	31	49.43	-12	05	38.7		9 675
1982	UG6	1990	08	29.40694	22	29	59.66	-12	16	07.8	17.0	9 675
1982	UG6	1990	08	29.44375	22	29	57.51	-12	16	18.7		9 675
1985	QR	1990	08	22.39288	22	37	04.53	-08	32	02.7	17.0	9 675
1985	QR	1990	08	22.43351	22	37	02.77	-08	32	20.9		9 675
1985	QR	1990	08	29.40694	22	32	10.59	-09	24	39.4	16.8	9 675
1985	QR	1990	08	29.44375	22	32	08.97	-09	24	55.2		9 675
1985	RC4	1990	08	24.43177	00	03	39.00	-01	49	39.3	17.2	9 675
1985	RC4	1990	08	24.46788	00	03	37.86	-01	49	49.9		9 675
1985	RC4	1990	08	29.46160	00	00	57.77	-02	13	55.3	17.2	9 675
1985	RC4	1990	08	29.49927	00	00	56.60	-02	14	05.2		9 675
1985	TL	1990	08	17.27847	21	26	35.53	-06	33	56.3	16.5	2 675
1985	TL	1990	08	17.30955	21	26	34.00	-06	34	03.9		2 675
1985	TL	1990	08	19.27743	21	25	07.16	-06	42	26.4		2 675
1985	TL	1990	08	19.30642	21	25	05.80	-06	42	34.3		2 675
1986	AJ	1990	08	17.28646	21	32	45.93	+08	44	15.8	16.0	2 675
1986	AJ	1990	08	17.31701	21	32	43.36	+08	44	30.4		2 675
1986	AJ	1990	08	20.23628	21	28	39.88	+09	05	03.7		2 675
1986	AJ	1990	08	20.26667	21	28	37.22	+09	05	15.8		2 675
1986	PX5	1990	08	27.36354	22	45	09.89	-15	10	57.7	16.2	9 675
1986	PX5	1990	08	27.39615	22	45	08.33	-15	11	13.0		9 675
1986	QL1	1990	08	27.36354	22	31	52.06	-14	33	09.6	17.5	9 675
1986	QL1	1990	08	27.39615	22	31	50.20	-14	33	17.6		9 675
1986	TD7	1990	08	27.37865	23	14	27.69	-25	03	02.0		9 675
1986	TD7	1990	08	27.40938	23	14	25.80	-25	03	01.9		9 675
1986	TD7	1990	08	29.38993	23	12	30.82	-25	05	51.6		9 675
1986	VC	1990	08	25.35955	23	40	10.25	-09	48	46.5	17.0	9 675
1986	VC	1990	08	25.39792	23	40	08.34	-09	48	50.2		9 675
1986	VW6	1990	08	25.35955	23	16	37.07	-10	12	32.8	16.8	9 675
1986	VW6	1990	08	25.39792	23	16	35.37	-10	12	47.0		9 675
1986	VW6	1990	08	26.36111	23	15	55.03	-10	18	45.8		9 675
1986	VW6	1990	08	26.39948	23	15	53.29	-10	18	59.9		9 675
1987	WR	1990	08	24.45052	00	50	33.80	+09	05	52.2	17.2	9 675
1987	WR	1990	08	24.48646	00	50	33.21	+09	05	50.9		9 675
1987	YB	1990	08	24.38316	23	28	34.75	-16	53	39.4	16.5	9 675

1987	YB	1990	08	24.42188	23	28	33.04	-16	53	58.5	9 675
1987	YB	1990	08	26.38160	23	27	10.09	-17	10	57.8	16.5 9 675
1987	YB	1990	08	26.41736	23	27	08.40	-17	11	15.9	9 675
1987	YB	1990	08	29.39844	23	24	51.32	-17	36	48.3	9 675
1988	AJ5	1990	08	23.47517	23	06	00.08	-05	33	46.2	17.5 9 675
1988	AJ5	1990	08	27.37031	23	03	18.99	-05	51	42.3	17.8 9 675
1988	AJ5	1990	08	27.40330	23	03	17.51	-05	51	49.2	9 675
1988	BJ1	1990	08	24.45052	00	53	58.96	+02	18	07.4	17.2 9 675
1988	BJ1	1990	08	24.48646	00	53	58.03	+02	18	02.6	9 675
1988	ED	1990	08	24.43177	23	47	18.25	+02	42	17.2	17.5 9 675
1988	ED	1990	08	24.46788	23	47	16.58	+02	42	18.5	9 675
1989	CB1	1990	08	25.35955	23	26	11.92	-08	28	35.2	16.5 9 675
1989	CB1	1990	08	25.39792	23	26	09.96	-08	28	54.7	9 675
1989	CE2	1990	08	18.46910	00	24	39.61	+23	23	48.9	16.0 2 675
1989	CE2	1990	08	18.49896	00	24	38.74	+23	24	30.5	2 675
1989	CE2	1990	08	20.45538	00	23	36.28	+24	08	55.6	2 675
1989	CE2	1990	08	20.48368	00	23	35.16	+24	09	33.4	2 675
1989	EL1	1990	08	17.40087	22	53	25.94	-01	47	34.8	16.5 2 675
1989	EL1	1990	08	17.42656	22	53	24.89	-01	47	47.9	2 675
1989	EL1	1990	08	20.35017	22	51	18.46	-02	11	22.7	2 675
1989	EL1	1990	08	20.37517	22	51	17.28	-02	11	35.8	2 675
1989	EX1	1990	08	27.36354	22	37	36.80	-14	13	21.6	17.0 9 675
1989	EX1	1990	08	27.39615	22	37	34.97	-14	13	40.0	9 675
1989	GN	1990	08	18.39688	22	33	35.93	-04	37	59.3	16.0 2 675
1989	GN	1990	08	18.42760	22	33	34.49	-04	38	15.2	2 675
1989	GN	1990	08	20.33750	22	32	02.56	-04	54	31.9	2 675
1989	GN	1990	08	20.36233	22	32	01.30	-04	54	45.0	2 675
1989	GO	1990	08	18.40920	23	07	04.04	-11	01	11.4	16.5 2 675
1989	GO	1990	08	18.43958	23	07	02.61	-11	01	22.1	2 675
1989	GO	1990	08	20.38802	23	05	28.48	-11	12	24.2	2 675
1989	GO	1990	08	20.41788	23	05	26.90	-11	12	34.3	2 675
1989	GO	1990	08	26.36111	23	00	20.75	-11	46	44.7	9 675
1989	GO	1990	08	26.39948	23	00	18.54	-11	46	57.1	9 675
1989	JG	1990	08	18.39080	22	27	25.43	-20	34	33.5	16.0 2 675
1989	JG	1990	08	18.42135	22	27	23.67	-20	34	45.9	2 675
1989	JG	1990	08	20.34358	22	25	45.85	-20	48	48.1	2 675
1989	JG	1990	08	20.36858	22	25	44.54	-20	48	58.5	2 675
1990	OB	1990	08	16.25208	20	19	44.23	+06	55	05.3	16.0 2 675
1990	OB	1990	08	16.27639	20	19	43.15	+06	54	54.4	2 675
1990	OB	1990	08	19.21962	20	17	39.12	+06	29	59.0	2 675
1990	OB	1990	08	19.24392	20	17	38.07	+06	29	45.9	2 675
1990	OD	1990	08	16.25208	20	30	29.34	+04	45	03.2	15.7 2 675
1990	OD	1990	08	16.27639	20	30	28.40	+04	44	55.1	2 675
1990	OD	1990	08	19.21962	20	28	42.71	+04	28	03.9	2 675
1990	OD	1990	08	19.24392	20	28	41.77	+04	27	55.1	2 675
1990	OE	1990	08	16.25208	20	30	27.19	+04	30	03.8	15.7 2 675
1990	OE	1990	08	16.27639	20	30	26.11	+04	29	57.0	2 675
1990	OE	1990	08	19.21962	20	28	12.58	+04	14	52.3	2 675
1990	OE	1990	08	19.24392	20	28	11.44	+04	14	43.6	2 675
1990	OF	1990	08	17.22500	20	48	00.87	+06	56	51.2	16.3 2 675
1990	OF	1990	08	17.25660	20	47	59.33	+06	56	50.3	2 675
1990	OF	1990	08	19.23194	20	46	36.38	+06	54	50.4	2 675
1990	OF	1990	08	19.25694	20	46	35.25	+06	54	48.6	2 675
1990	OH	1990	08	17.22500	20	46	12.20	+09	41	48.2	16.0 2 675
1990	OH	1990	08	17.25660	20	46	10.97	+09	41	34.8	2 675
1990	OH	1990	08	19.23194	20	44	58.45	+09	28	15.9	2 675
1990	OJ	1990	08	16.23420	20	08	05.85	-05	21	31.9	16.7 2 675
1990	OJ	1990	08	16.25833	20	08	04.81	-05	21	31.0	2 675
1990	OJ	1990	08	19.17639	20	06	08.56	-05	21	18.1	2 675

1990	OJ	1990	08	19.20052	20	06	07.57	-05	21	18.4		2 675
1990	OK	1990	08	16.23420	20	11	29.92	-07	14	16.8	16.5	2 675
1990	OK	1990	08	16.25833	20	11	28.70	-07	14	19.8		2 675
1990	OK	1990	08	19.17639	20	09	29.81	-07	20	55.1		2 675
1990	OK	1990	08	19.20052	20	09	28.87	-07	21	00.0		2 675
1990	OL	1990	08	16.29167	21	40	34.43	-07	46	06.4	15.5	2 675
1990	OL	1990	08	16.31719	21	40	34.74	-07	46	54.0		2 675
1990	OL	1990	08	19.33802	21	41	40.42	-09	21	13.1		2 675
1990	OL	1990	08	19.36198	21	41	40.91	-09	21	58.2		2 675
1990	OM	1990	08	23.43941	23	13	04.64	-08	09	37.7	15.0	9 675
1990	OM	1990	08	23.47517	23	13	03.45	-08	09	57.5		9 675
1990	OM	1990	08	25.35955	23	12	01.63	-08	26	47.0	14.5	9 675
1990	OM	1990	08	25.39792	23	12	00.18	-08	27	07.0		9 675
1990	OM	1990	08	26.36111	23	11	26.92	-08	35	54.1	15.0	9 675
1990	OM	1990	08	26.39948	23	11	25.42	-08	36	15.1		9 675
1990	OM	1990	08	27.37031	23	10	50.84	-08	45	14.1	15.0	9 675
1990	OM	1990	08	27.40330	23	10	49.55	-08	45	29.9		9 675
1990	OO	1990	08	16.23420	20	18	47.91	-06	41	55.3	16.7	2 675
1990	OO	1990	08	16.25833	20	18	46.91	-06	42	02.0		2 675
1990	OO	1990	08	19.17639	20	16	54.96	-06	59	31.0		2 675
1990	OO	1990	08	19.20052	20	16	53.86	-06	59	38.7		2 675
1990	OP	1990	08	16.24618	20	18	12.37	-09	25	02.7	16.0	2 675
1990	OP	1990	08	16.27031	20	18	11.40	-09	25	19.6		2 675
1990	OP	1990	08	19.21337	20	16	32.55	-10	00	38.2		2 675
1990	OP	1990	08	19.23802	20	16	31.68	-10	00	55.7		2 675
1990	OT	1990	08	17.27847	21	20	28.55	-05	32	04.3	16.3	2 675
1990	OT	1990	08	17.30955	21	20	26.63	-05	32	05.8		2 675
1990	OT	1990	08	19.27743	21	18	31.60	-05	33	59.8		2 675
1990	OT	1990	08	19.30642	21	18	29.68	-05	34	01.5		2 675
1990	OV	1990	08	17.21875	20	30	34.82	-06	37	54.2	16.3	2 675
1990	OV	1990	08	17.25069	20	30	33.39	-06	38	05.8		2 675
1990	OV	1990	08	19.22552	20	29	11.71	-06	51	13.6		2 675
1990	OV	1990	08	19.25000	20	29	10.65	-06	51	22.4		2 675
1990	OX	1990	08	17.21875	20	42	38.55	-07	09	39.4	16.0	2 675
1990	OX	1990	08	17.25069	20	42	37.14	-07	09	49.9		2 675
1990	OX	1990	08	19.22552	20	41	11.70	-07	20	08.1		2 675
1990	OX	1990	08	19.25000	20	41	10.65	-07	20	16.6		2 675
1990	OY	1990	08	16.29809	20	51	37.43	-09	20	16.0	16.0	2 675
1990	OY	1990	08	16.32326	20	51	36.32	-09	20	36.4		2 675
1990	OY	1990	08	19.26424	20	49	40.53	-10	01	18.1		2 675
1990	OY	1990	08	19.29236	20	49	39.21	-10	01	41.3		2 675
1990	OA1	1990	08	17.28646	21	30	09.12	+08	48	04.8	15.7	2 675
1990	OA1	1990	08	17.31701	21	30	07.38	+08	48	02.6		2 675
1990	OA1	1990	08	20.23628	21	27	24.16	+08	43	06.7		2 675
1990	OA1	1990	08	20.26667	21	27	22.37	+08	43	03.5		2 675
1990	OB1	1990	08	17.29444	21	34	46.92	+03	53	47.3	16.3	2 675
1990	OB1	1990	08	17.32448	21	34	45.16	+03	53	36.8		2 675
1990	OB1	1990	08	20.24462	21	32	14.01	+03	35	40.8		2 675
1990	OB1	1990	08	20.27396	21	32	12.45	+03	35	30.6		2 675
1990	OC1	1990	08	17.29444	21	46	57.95	+04	18	03.6	16.7	2 675
1990	OC1	1990	08	17.32448	21	46	56.42	+04	17	57.8		2 675
1990	OC1	1990	08	20.24462	21	44	40.96	+04	08	39.8		2 675
1990	OC1	1990	08	20.27396	21	44	39.60	+04	08	33.6		2 675
1990	OF1	1990	08	16.20017	19	40	10.94	-08	20	42.5	15.7	2 675
1990	OF1	1990	08	16.22587	19	40	10.21	-08	20	56.8		2 675
1990	OF1	1990	08	19.17066	19	39	03.42	-08	48	47.5		2 675
1990	OF1	1990	08	19.19462	19	39	02.85	-08	49	00.7		2 675
1990	OH1	1990	08	16.18073	16	59	07.93	+02	58	13.6	16.5	2 675
1990	OH1	1990	08	16.20677	16	59	08.94	+02	58	11.8		2 675

1990	OH1		1990	08	19.16354	17	01	08.04	+02	54	15.2	2 675
1990	OH1		1990	08	19.18854	17	01	08.99	+02	54	12.7	2 675
1990	QM		1990	08	29.40694	22	33	20.99	-08	41	51.3	17.0 9 675
1990	QM		1990	08	29.44375	22	33	19.01	-08	42	06.3	9 675
1990	QO	*	1990	08	19.39375	22	03	03.25	-02	15	24.1	15.7 2 675
1990	QO		1990	08	19.41927	22	03	01.91	-02	15	52.9	2 675
1990	QO		1990	08	21.32309	22	01	28.23	-02	52	39.4	2 675
1990	QO		1990	08	21.34618	22	01	27.01	-02	53	06.1	2 675
1990	QP	*	1990	08	19.39375	22	07	41.00	-02	09	54.6	16.7 2 675
1990	QP		1990	08	19.41927	22	07	39.61	-02	10	07.5	2 675
1990	QP		1990	08	21.32309	22	06	09.27	-02	26	29.8	2 675
1990	QP		1990	08	21.34618	22	06	08.01	-02	26	41.3	2 675
1990	QQ	*	1990	08	19.39375	22	24	07.22	-02	18	30.8	16.0 2 675
1990	QQ		1990	08	19.41927	22	24	05.41	-02	18	31.0	2 675
1990	QQ		1990	08	21.32309	22	22	00.54	-02	20	02.1	2 675
1990	QQ		1990	08	21.34618	22	21	58.97	-02	20	03.4	2 675
1990	QR	*	1990	08	19.39375	22	27	42.12	-02	11	09.9	15.7 2 675
1990	QR		1990	08	19.41927	22	27	40.95	-02	11	27.3	2 675
1990	QR		1990	08	21.32309	22	26	23.51	-02	33	39.6	2 675
1990	QR		1990	08	21.34618	22	26	22.46	-02	33	53.6	2 675
1990	QS	*	1990	08	19.39983	22	19	02.15	-16	13	28.3	15.7 2 675
1990	QS		1990	08	19.42535	22	19	00.39	-16	13	26.1	2 675
1990	QS		1990	08	21.36493	22	16	57.13	-16	10	36.2	2 675
1990	QS		1990	08	21.38976	22	16	55.50	-16	10	34.4	2 675
1990	QT	*	1990	08	19.39983	22	20	12.22	-15	51	08.8	16.0 2 675
1990	QT		1990	08	19.42535	22	20	10.51	-15	51	09.1	2 675
1990	QT		1990	08	21.36493	22	18	12.96	-15	52	11.4	2 675
1990	QT		1990	08	21.38976	22	18	11.41	-15	52	12.3	2 675
1990	QU	*	1990	08	19.39983	22	22	16.48	-15	53	31.1	16.3 2 675
1990	QU		1990	08	19.42535	22	22	14.41	-15	53	19.5	2 675
1990	QU		1990	08	21.36493	22	19	43.92	-15	39	30.6	2 675
1990	QU		1990	08	21.38976	22	19	41.92	-15	39	19.8	2 675
1990	QV	*	1990	08	19.39983	22	25	24.87	-15	04	58.9	16.3 2 675
1990	QV		1990	08	19.42535	22	25	23.42	-15	05	14.2	2 675
1990	QV		1990	08	21.36493	22	23	41.29	-15	23	53.7	2 675
1990	QV		1990	08	21.38976	22	23	39.92	-15	24	07.7	2 675
1990	QW	*	1990	08	19.39983	22	28	39.72	-14	46	13.2	16.0 2 675
1990	QW		1990	08	19.42535	22	28	38.02	-14	46	12.0	2 675
1990	QW		1990	08	21.36493	22	26	36.80	-14	45	50.9	2 675
1990	QW		1990	08	21.38976	22	26	35.17	-14	45	50.3	2 675
1990	QX	*	1990	08	20.44201	23	10	27.48	+17	37	19.5	16.5 2 675
1990	QX		1990	08	20.46979	23	10	26.17	+17	37	23.7	2 675
1990	QX		1990	08	21.42135	23	09	45.17	+17	39	50.6	2 675
1990	QX		1990	08	21.45243	23	09	43.61	+17	39	55.3	2 675
1990	QD1	*	1990	08	16.27083	22	27	00	+02	00	.2	2 675
1990	QD1		1990	08	18.34705	22	25	51.42	+01	39	26.2	16.3 2 675
1990	QD1		1990	08	18.37083	22	25	50.50	+01	39	12.0	2 675
1990	QD1		1990	08	20.30035	22	24	43.03	+01	18	38.5	2 675
1990	QD1		1990	08	20.32483	22	24	41.96	+01	18	23.4	2 675
1990	QF1		1990	08	23.43941	23	17	12.30	-03	18	47.0	17.8 9 675
1990	QF1		1990	08	23.47517	23	17	10.62	-03	18	55.0	9 675
1990	QG1	*	1990	08	22.40318	23	20	06.91	-05	29	06.1	17.0 9 675
1990	QG1		1990	08	22.44363	23	20	04.77	-05	29	07.5	9 675
1990	QG1		1990	08	23.43941	23	19	15.17	-05	29	25.8	17.0 9 675
1990	QG1		1990	08	23.47517	23	19	13.26	-05	29	26.5	9 675
1990	QG1		1990	08	27.37031	23	15	47.54	-05	31	26.6	17.2 9 675
1990	QG1		1990	08	27.40330	23	15	45.59	-05	31	26.1	9 675
1990	QG1		1990	08	28.40590	23	14	49.94	-05	32	07.1	17.0 9 675
1990	QG1		1990	08	28.43906	23	14	48.02	-05	32	07.4	9 675

1990	QH1	*	1990	08	22.40318	23	20	44.14	-05	10	32.2	16.8	9 675
1990	QH1		1990	08	22.44363	23	20	41.98	-05	10	36.5		9 675
1990	QH1		1990	08	23.43941	23	19	52.42	-05	12	19.8	16.8	9 675
1990	QH1		1990	08	23.47517	23	19	50.58	-05	12	23.6		9 675
1990	QH1		1990	08	27.37031	23	16	26.20	-05	19	59.2	17.0	9 675
1990	QH1		1990	08	27.40330	23	16	24.29	-05	20	01.2		9 675
1990	QH1		1990	08	28.40590	23	15	29.22	-05	22	10.3	16.8	9 675
1990	QH1		1990	08	28.43906	23	15	27.32	-05	22	12.4		9 675
1990	QJ1	*	1990	08	22.40318	23	21	48.18	-01	18	36.3	17.2	9 675
1990	QJ1		1990	08	22.44363	23	21	46.25	-01	18	35.4		9 675
1990	QJ1		1990	08	28.40590	23	17	03.12	-01	20	22.9	17.8	9 675
1990	QJ1		1990	08	28.43906	23	17	01.28	-01	20	23.6		9 675
1990	QK1	*	1990	08	22.40318	23	22	05.25	+00	03	29.7	17.5	9 675
1990	QK1		1990	08	22.44363	23	22	03.71	+00	03	11.1		9 675
1990	QK1		1990	08	28.40590	23	18	17.98	-00	46	14.9	17.0	9 675
1990	QK1		1990	08	28.43906	23	18	16.57	-00	46	30.5		9 675
1990	QL1	*	1990	08	22.40318	23	22	10.59	-04	05	26.7	17.5	9 675
1990	QL1		1990	08	22.44363	23	22	09.25	-04	05	45.2		9 675
1990	QL1		1990	08	23.43941	23	21	38.72	-04	13	08.7	17.2	9 675
1990	QL1		1990	08	23.47517	23	21	37.60	-04	13	26.5		9 675
1990	QL1		1990	08	27.37031	23	19	30.33	-04	43	30.3	17.2	9 675
1990	QL1		1990	08	27.40330	23	19	29.10	-04	43	43.8		9 675
1990	QL1		1990	08	28.40590	23	18	54.35	-04	51	44.4	17.5	9 675
1990	QL1		1990	08	28.43906	23	18	53.19	-04	51	59.7		9 675
1990	QM1	*	1990	08	22.40318	23	22	22.70	-05	08	09.2	17.5	9 675
1990	QM1		1990	08	22.44363	23	22	21.26	-05	08	21.8		9 675
1990	QM1		1990	08	23.43941	23	21	47.43	-05	13	07.0	17.5	9 675
1990	QM1		1990	08	23.47517	23	21	46.17	-05	13	18.3		9 675
1990	QM1		1990	08	27.37031	23	19	25.82	-05	32	43.2	17.5	9 675
1990	QM1		1990	08	27.40330	23	19	24.49	-05	32	51.6		9 675
1990	QM1		1990	08	28.40590	23	18	46.43	-05	38	02.6	17.5	9 675
1990	QM1		1990	08	28.43906	23	18	45.16	-05	38	11.8		9 675
1990	QN1	*	1990	08	22.40318	23	22	43.03	-00	31	21.1	17.5	9 675
1990	QN1		1990	08	22.44363	23	22	40.76	-00	31	26.1		9 675
1990	QN1		1990	08	28.40590	23	17	20.62	-00	45	47.4	17.8	9 675
1990	QN1		1990	08	28.43906	23	17	18.69	-00	45	52.6		9 675
1990	QO1	*	1990	08	22.40318	23	24	43.90	-01	54	47.1	17.5	9 675
1990	QO1		1990	08	22.44363	23	24	42.01	-01	54	52.3		9 675
1990	QO1		1990	08	28.40590	23	20	12.42	-02	03	52.5	17.5	9 675
1990	QO1		1990	08	28.43906	23	20	10.79	-02	03	54.0		9 675
1990	QP1	*	1990	08	22.40318	23	25	23.24	-02	25	21.8	17.2	9 675
1990	QP1		1990	08	22.44363	23	25	21.26	-02	25	29.6		9 675
1990	QP1		1990	08	28.40590	23	20	31.66	-02	45	48.4	17.2	9 675
1990	QP1		1990	08	28.43906	23	20	29.82	-02	45	55.0		9 675
1990	QQ1	*	1990	08	22.40318	23	26	23.75	-02	10	55.8	17.5	9 675
1990	QQ1		1990	08	22.44363	23	26	21.84	-02	10	56.0		9 675
1990	QQ1		1990	08	28.40590	23	21	40.73	-02	10	14.0	17.5	9 675
1990	QQ1		1990	08	28.43906	23	21	39.19	-02	10	13.2		9 675
1990	QR1	*	1990	08	22.40318	23	27	13.32	-04	36	54.7	17.8	9 675
1990	QR1		1990	08	22.44363	23	27	11.76	-04	37	05.2		9 675
1990	QR1		1990	08	27.37031	23	23	54.07	-05	01	01.3	17.8	9 675
1990	QR1		1990	08	27.40330	23	23	52.58	-05	01	08.9		9 675
1990	QR1		1990	08	28.40590	23	23	09.79	-05	06	16.4	17.8	9 675
1990	QR1		1990	08	28.43906	23	23	08.38	-05	06	26.4		9 675
1990	QS1	*	1990	08	22.40318	23	28	23.49	-05	20	40.3	17.5	9 675
1990	QS1		1990	08	22.44363	23	28	21.77	-05	20	49.6		9 675
1990	QS1		1990	08	27.37031	23	24	43.34	-05	38	58.4	17.5	9 675
1990	QS1		1990	08	27.40330	23	24	41.65	-05	39	07.4		9 675
1990	QS1		1990	08	28.40590	23	23	54.75	-05	42	58.9	17.5	9 675

1990	QS1		1990	08	28.43906	23	23	53.12	-05	43	07.3		9 675
1990	QT1	*	1990	08	22.40318	23	29	10.86	-06	17	40.6	17.5	9 675
1990	QT1		1990	08	22.44363	23	29	09.58	-06	17	55.6		9 675
1990	QT1		1990	08	25.35955	23	27	39.53	-06	36	57.4	17.2	9 675
1990	QT1		1990	08	25.39792	23	27	38.09	-06	37	12.6		9 675
1990	QU1	*	1990	08	22.40318	23	30	11.86	-05	56	09.0	16.8	9 675
1990	QU1		1990	08	22.44363	23	30	10.44	-05	56	18.6		9 675
1990	QU1		1990	08	25.35955	23	28	30.13	-06	07	57.3	16.2	9 675
1990	QU1		1990	08	25.39792	23	28	28.67	-06	08	05.7		9 675
1990	QU1		1990	08	28.40590	23	26	36.88	-06	20	41.5	16.8	9 675
1990	QU1		1990	08	28.43906	23	26	35.54	-06	20	50.3		9 675
1990	QV1	*	1990	08	22.40318	23	30	26.35	-06	43	58.0	17.8	9 675
1990	QV1		1990	08	22.44363	23	30	24.83	-06	44	10.5		9 675
1990	QV1		1990	08	25.35955	23	28	38.74	-06	59	44.7	17.8	9 675
1990	QV1		1990	08	25.39792	23	28	37.27	-06	59	55.6		9 675
1990	QV1		1990	08	28.40590	23	26	39.73	-07	16	33.2	17.5	9 675
1990	QV1		1990	08	28.43906	23	26	38.12	-07	16	43.7		9 675
1990	QW1	*	1990	08	22.40318	23	32	23.37	-03	08	41.3	17.5	9 675
1990	QW1		1990	08	22.44363	23	32	21.54	-03	08	46.0		9 675
1990	QW1		1990	08	28.40590	23	27	41.95	-03	21	25.1	17.5	9 675
1990	QW1		1990	08	28.43906	23	27	40.23	-03	21	29.1		9 675
1990	QX1	*	1990	08	22.40318	23	33	31.19	-04	31	12.4	17.5	9 675
1990	QX1		1990	08	22.44363	23	33	29.59	-04	31	23.4		9 675
1990	QX1		1990	08	28.40590	23	29	29.33	-04	58	09.7	17.5	9 675
1990	QX1		1990	08	28.43906	23	29	27.76	-04	58	19.0		9 675
1990	QY1	*	1990	08	22.40318	23	34	00.38	-05	00	18.2	17.0	9 675
1990	QY1		1990	08	22.44363	23	33	58.94	-05	00	35.6		9 675
1990	QY1		1990	08	28.40590	23	30	40.41	-05	43	07.9	17.2	9 675
1990	QY1		1990	08	28.43906	23	30	38.27	-05	43	18.1		9 675
1990	QZ1	*	1990	08	22.40318	23	34	23.55	-03	15	04.4	17.5	9 675
1990	QZ1		1990	08	22.44363	23	34	21.60	-03	15	09.4		9 675
1990	QZ1		1990	08	28.40590	23	29	26.12	-03	27	37.2	17.5	9 675
1990	QZ1		1990	08	28.43906	23	29	24.32	-03	27	41.9		9 675
1990	QA2	*	1990	08	22.40318	23	34	28.02	-01	38	46.1	17.5	9 675
1990	QA2		1990	08	22.44363	23	34	26.38	-01	38	54.3		9 675
1990	QA2		1990	08	28.40590	23	30	18.33	-02	00	46.1	17.5	9 675
1990	QA2		1990	08	28.43906	23	30	16.79	-02	00	52.5		9 675
1990	QB2	*	1990	08	22.40318	23	34	55.52	-01	50	17.5	16.8	9 675
1990	QB2		1990	08	22.44363	23	34	54.18	-01	50	29.9		9 675
1990	QB2		1990	08	28.40590	23	31	35.02	-02	23	04.3	16.8	9 675
1990	QB2		1990	08	28.43906	23	31	33.68	-02	23	16.0		9 675
1990	QC2	*	1990	08	22.40318	23	37	09.78	-02	07	08.1	17.2	9 675
1990	QC2		1990	08	22.44363	23	37	08.07	-02	07	27.7		9 675
1990	QC2		1990	08	28.40590	23	32	56.09	-02	58	49.7	17.2	9 675
1990	QC2		1990	08	28.43906	23	32	54.46	-02	59	07.6		9 675
1990	QD2	*	1990	08	22.40318	23	37	33.14	-05	03	54.0	16.2	9 675
1990	QD2		1990	08	22.44363	23	37	31.68	-05	04	06.7		9 675
1990	QD2		1990	08	28.40590	23	33	56.53	-05	37	28.4	16.5	9 675
1990	QD2		1990	08	28.43906	23	33	55.09	-05	37	40.7		9 675
1990	QE2	*	1990	08	22.40318	23	37	41.56	-01	09	36.7	16.8	9 675
1990	QE2		1990	08	22.44363	23	37	39.49	-01	09	39.3		9 675
1990	QE2		1990	08	28.40590	23	32	30.33	-01	17	30.1	17.0	9 675
1990	QE2		1990	08	28.43906	23	32	28.40	-01	17	32.8		9 675
1990	QF2	*	1990	08	22.40318	23	37	51.60	-05	13	13.9	17.5	9 675
1990	QF2		1990	08	22.44363	23	37	50.12	-05	13	26.5		9 675
1990	QF2		1990	08	28.40590	23	34	08.83	-05	45	39.0	17.5	9 675
1990	QF2		1990	08	28.43906	23	34	07.40	-05	45	50.3		9 675
1990	QG2	*	1990	08	22.40318	23	38	05.11	-02	25	16.7	16.8	9 675
1990	QG2		1990	08	22.44363	23	38	03.91	-02	25	34.6		9 675

1990	QG2		1990	08	28.40590	23	34	59.39	-03	11	42.5	17.2	9 675
1990	QG2		1990	08	28.43906	23	34	58.39	-03	11	56.5		9 675
1990	QH2	*	1990	08	22.40318	23	38	44.62	-04	52	12.4	17.2	9 675
1990	QH2		1990	08	22.44363	23	38	42.98	-04	52	14.8		9 675
1990	QH2		1990	08	28.40590	23	34	35.83	-04	59	17.5	17.5	9 675
1990	QH2		1990	08	28.43906	23	34	34.23	-04	59	21.0		9 675
1990	QJ2	*	1990	08	22.40318	23	39	51.67	-04	50	24.7	17.8	9 675
1990	QJ2		1990	08	22.44363	23	39	50.11	-04	50	33.7		9 675
1990	QJ2		1990	08	28.40590	23	35	59.92	-05	14	31.6	17.8	9 675
1990	QJ2		1990	08	28.43906	23	35	58.44	-05	14	40.7		9 675
1990	QK2	*	1990	08	22.40318	23	40	34.80	-06	18	19.4	17.5	9 675
1990	QK2		1990	08	22.44363	23	40	33.68	-06	18	42.3		9 675
1990	QK2		1990	08	28.40590	23	37	50.02	-07	17	47.1	17.2	9 675
1990	QK2		1990	08	28.43906	23	37	48.89	-07	18	09.5		9 675
1990	QL2	*	1990	08	22.40318	23	40	58.07	-02	30	26.5	16.5	9 675
1990	QL2		1990	08	22.44363	23	40	56.84	-02	30	44.1		9 675
1990	QL2		1990	08	28.40590	23	37	44.06	-03	16	21.3	16.5	9 675
1990	QL2		1990	08	28.43906	23	37	42.77	-03	16	37.0		9 675
1990	QM2	*	1990	08	22.40318	23	41	21.65	-01	08	57.2	16.0	9 675
1990	QM2		1990	08	22.44363	23	41	20.89	-01	10	00.5		9 675
1990	QM2		1990	08	24.43177	23	40	47.91	-02	02	18.9	16.0	9 675
1990	QM2		1990	08	24.46788	23	40	47.11	-02	03	17.2		9 675
1990	QM2		1990	08	28.40590	23	39	21.84	-03	52	04.2	15.8	9 675
1990	QM2		1990	08	28.43906	23	39	20.91	-03	53	00.3		9 675
1990	QN2	*	1990	08	22.40318	23	44	45.53	-02	31	13.1	17.0	9 675
1990	QN2		1990	08	22.44363	23	44	43.67	-02	31	12.6		9 675
1990	QN2		1990	08	24.43177	23	43	15.84	-02	30	17.7	17.2	9 675
1990	QN2		1990	08	24.46788	23	43	14.05	-02	30	17.2		9 675
1990	QN2		1990	08	28.40590	23	40	02.23	-02	29	56.3	17.2	9 675
1990	QN2		1990	08	28.43906	23	40	00.42	-02	29	57.7		9 675
1990	QO2	*	1990	08	22.40318	23	44	58.49	-02	51	26.9	17.5	9 675
1990	QO2		1990	08	22.44363	23	44	57.24	-02	51	38.1		9 675
1990	QO2		1990	08	24.43177	23	43	56.32	-03	01	00.8	17.8	9 675
1990	QO2		1990	08	24.46788	23	43	55.26	-03	01	11.1		9 675
1990	QO2		1990	08	28.40590	23	41	42.05	-03	21	08.1	17.5	9 675
1990	QO2		1990	08	28.43906	23	41	40.75	-03	21	19.0		9 675
1990	QP2	*	1990	08	24.43177	00	00	41.97	-00	26	16.3	17.5	9 675
1990	QP2		1990	08	24.46788	00	00	40.76	-00	26	23.2		9 675
1990	QP2		1990	08	29.46160	23	57	47.33	-00	42	34.7	17.5	9 675
1990	QP2		1990	08	29.49927	23	57	46.05	-00	42	41.1		9 675
1990	QQ2	*	1990	08	24.43177	00	03	36.97	-01	56	04.1	16.8	9 675
1990	QQ2		1990	08	24.46788	00	03	36.19	-01	56	18.7		9 675
1990	QQ2		1990	08	29.46160	00	01	41.75	-02	30	39.6	17.2	9 675
1990	QQ2		1990	08	29.49927	00	01	40.79	-02	30	53.8		9 675
1990	QR2	*	1990	08	24.43177	00	04	50.24	+02	32	02.3	17.2	9 675
1990	QR2		1990	08	24.46788	00	04	48.91	+02	31	59.5		9 675
1990	QR2		1990	08	29.46160	00	01	46.24	+02	22	56.2	17.2	9 675
1990	QR2		1990	08	29.49927	00	01	44.86	+02	22	50.2		9 675
1990	QS2	*	1990	08	24.43177	00	06	03.39	-01	18	47.9	17.5	9 675
1990	QS2		1990	08	24.46788	00	06	02.29	-01	18	57.3		9 675
1990	QS2		1990	08	29.46160	00	03	21.68	-01	42	19.3	16.8	9 675
1990	QS2		1990	08	29.49927	00	03	19.13	-01	42	27.8		9 675
1990	QT2	*	1990	08	24.43177	00	11	51.25	+00	16	26.8	17.5	9 675
1990	QT2		1990	08	24.46788	00	11	50.18	+00	16	20.3		9 675
1990	QT2		1990	08	29.46160	00	09	20.23	+00	00	43.7	17.5	9 675
1990	QT2		1990	08	29.49927	00	09	18.92	+00	00	37.3		9 675
1990	QU2	*	1990	08	24.43177	23	42	56.52	-00	46	05.7	17.5	9 675
1990	QU2		1990	08	24.46788	23	42	56.11	-00	46	29.7		9 675
1990	QU2		1990	08	29.46160	23	41	58.10	-01	45	35.1	17.5	9 675

1990	QU2		1990	08	29.49927	23	41	57.53	-01	45	59.0	9 675
1990	QV2	*	1990	08	24.43177	23	48	31.42	+01	29	52.6	17.2 9 675
1990	QV2		1990	08	24.46788	23	48	30.30	+01	29	38.6	9 675
1990	QV2		1990	08	29.46160	23	45	55.10	+00	54	54.3	17.5 9 675
1990	QV2		1990	08	29.49927	23	45	53.94	+00	54	39.3	9 675
1990	QW2	*	1990	08	24.43177	23	55	36.47	+03	20	15.7	17.0 9 675
1990	QW2		1990	08	24.46788	23	55	34.60	+03	20	17.9	9 675
1990	QW2		1990	08	29.46160	23	51	04.65	+03	24	18.6	17.0 9 675
1990	QW2		1990	08	29.49927	23	51	02.75	+03	24	19.7	9 675
1990	QX2	*	1990	08	24.43177	23	57	37.63	-03	56	04.9	16.8 9 675
1990	QX2		1990	08	24.46788	23	57	36.28	-03	56	09.5	9 675
1990	QX2		1990	08	29.46160	23	54	23.99	-04	08	19.2	16.8 9 675
1990	QX2		1990	08	29.49927	23	54	22.50	-04	08	23.5	9 675
1990	QY2		1990	08	22.40318	23	21	26.67	-05	33	43.9	17.2 9 675
1990	QY2		1990	08	22.44363	23	21	24.77	-05	33	54.6	9 675
1990	QY2		1990	08	23.43941	23	20	40.92	-05	37	39.6	17.5 9 675
1990	QY2		1990	08	23.47517	23	20	39.27	-05	37	47.3	9 675
1990	QY2		1990	08	27.37031	23	17	37.54	-05	53	21.1	17.5 9 675
1990	QY2		1990	08	27.40330	23	17	35.88	-05	53	27.3	9 675
1990	QY2	*	1990	08	28.40590	23	16	46.58	-05	57	38.3	17.5 9 675
1990	QY2		1990	08	28.43906	23	16	44.96	-05	57	46.6	9 675
1990	QZ2		1990	08	22.40318	23	22	44.03	-05	17	21.3	17.5 9 675
1990	QZ2		1990	08	22.44363	23	22	42.56	-05	17	24.5	9 675
1990	QZ2		1990	08	23.43941	23	22	09.22	-05	19	02.0	17.5 9 675
1990	QZ2		1990	08	23.47517	23	22	08.01	-05	19	07.2	9 675
1990	QZ2		1990	08	27.37031	23	19	43.35	-05	26	34.5	17.5 9 675
1990	QZ2		1990	08	27.40330	23	19	41.84	-05	26	33.5	9 675
1990	QZ2	*	1990	08	28.40590	23	19	01.14	-05	28	46.2	17.5 9 675
1990	QZ2		1990	08	28.43906	23	18	59.70	-05	28	49.7	9 675
1990	QA3		1990	08	22.40318	23	23	15.24	-00	20	09.8	17.2 9 675
1990	QA3		1990	08	22.44363	23	23	13.77	-00	20	25.4	9 675
1990	QA3	*	1990	08	28.40590	23	19	18.30	-01	05	12.0	17.5 9 675
1990	QA3		1990	08	28.43906	23	19	16.82	-01	05	26.6	9 675
1990	QB3		1990	08	22.40318	23	25	24.52	-03	46	35.3	17.5 9 675
1990	QB3		1990	08	22.44363	23	25	23.01	-03	46	52.2	9 675
1990	QB3		1990	08	27.37031	23	22	17.97	-04	22	56.0	17.5 9 675
1990	QB3		1990	08	27.40330	23	22	16.50	-04	23	08.6	9 675
1990	QB3	*	1990	08	28.40590	23	21	34.78	-04	31	00.6	17.5 9 675
1990	QB3		1990	08	28.43906	23	21	33.27	-04	31	15.2	9 675
1990	QC3		1990	08	22.40318	23	26	31.55	-03	17	42.0	17.5 9 675
1990	QC3		1990	08	22.44363	23	26	30.06	-03	17	56.5	9 675
1990	QC3	*	1990	08	28.40590	23	22	58.96	-03	57	53.3	17.2 9 675
1990	QC3		1990	08	28.43906	23	22	57.54	-03	58	07.6	9 675
1990	QD3		1990	08	22.40318	23	28	45.72	-03	00	05.7	17.2 9 675
1990	QD3		1990	08	22.44363	23	28	43.88	-02	59	58.8	9 675
1990	QD3	*	1990	08	28.40590	23	23	54.90	-02	46	20.7	17.2 9 675
1990	QD3		1990	08	28.43906	23	23	53.06	-02	46	15.4	9 675
1990	QE3		1990	08	22.40318	23	26	54.03	-02	42	16.6	17.5 9 675
1990	QE3		1990	08	22.44363	23	26	52.49	-02	42	28.6	9 675
1990	QE3	*	1990	08	28.40590	23	24	22.10	-02	52	30.9	17.5 9 675
1990	QE3		1990	08	28.43906	23	24	20.57	-02	52	44.6	9 675
1990	QF3		1990	08	22.40318	23	28	56.44	-02	33	25.6	17.8 9 675
1990	QF3		1990	08	22.44363	23	28	54.99	-02	33	39.9	9 675
1990	QF3	*	1990	08	28.40590	23	25	31.86	-03	09	04.1	17.5 9 675
1990	QF3		1990	08	28.43906	23	25	30.69	-03	09	17.0	9 675
1990	QG3		1990	08	22.40318	23	27	46.24	-07	23	29.6	17.5 9 675
1990	QG3		1990	08	22.44363	23	27	45.58	-07	23	29.1	9 675
1990	QG3		1990	08	25.35955	23	26	59.23	-07	27	11.1	17.5 9 675
1990	QG3		1990	08	25.39792	23	26	58.33	-07	27	13.3	9 675

1990	QG3	*	1990	08	28.40590	23	25	54.34	-07	31	48.5	17.2	9 675
1990	QG3		1990	08	28.43906	23	25	53.34	-07	31	53.4		9 675
1990	QH3		1990	08	20.40880	23	34	56.68	-04	03	43.3	16.3	2 675
1990	QH3		1990	08	20.43559	23	34	55.10	-04	03	26.6		2 675
1990	QH3		1990	08	21.42934	23	34	00.83	-03	53	26.4		2 675
1990	QH3		1990	08	21.45833	23	33	59.05	-03	53	07.6		2 675
1990	QH3		1990	08	22.40318	23	33	05.67	-03	43	40.4	16.8	9 675
1990	QH3		1990	08	22.44363	23	33	03.21	-03	43	16.0		9 675
1990	QH3	*	1990	08	28.40590	23	26	51.43	-02	44	35.0	17.2	9 675
1990	QH3		1990	08	28.43906	23	26	49.12	-02	44	15.3		9 675
1990	QJ3		1990	08	22.40318	23	34	34.53	-04	36	01.6	17.5	9 675
1990	QJ3		1990	08	22.44363	23	34	32.66	-04	36	02.1		9 675
1990	QJ3	*	1990	08	28.40590	23	29	53.94	-04	38	26.9	17.5	9 675
1990	QJ3		1990	08	28.43906	23	29	52.18	-04	38	27.5		9 675
1990	QK3		1990	08	22.40318	23	38	04.30	-04	45	41.0	17.5	9 675
1990	QK3		1990	08	22.44363	23	38	02.97	-04	46	00.1		9 675
1990	QK3	*	1990	08	28.40590	23	34	40.68	-05	37	30.5	17.0	9 675
1990	QK3		1990	08	28.43906	23	34	39.37	-05	37	49.8		9 675
1990	QL3		1990	08	22.40318	23	41	24.08	-03	13	49.8	17.0	9 675
1990	QL3		1990	08	22.44363	23	41	22.26	-03	13	51.7		9 675
1990	QL3	*	1990	08	28.40590	23	36	47.41	-03	20	24.9	17.2	9 675
1990	QL3		1990	08	28.43906	23	36	45.72	-03	20	27.9		9 675
1990	QM3		1990	08	22.40318	23	43	39.14	-04	31	30.1	17.8	9 675
1990	QM3		1990	08	22.44363	23	43	37.38	-04	31	28.7		9 675
1990	QM3	*	1990	08	28.40590	23	39	07.16	-04	29	22.0	17.8	9 675
1990	QM3		1990	08	28.43906	23	39	05.36	-04	29	21.4		9 675
1990	QN3	*	1990	08	16.23420	20	12	09.56	-05	45	49.0		2 675
1990	QN3		1990	08	16.25833	20	12	08.29	-05	46	02.0		2 675
1990	QN3		1990	08	19.17639	20	09	58.89	-06	12	49.5		2 675
1990	QN3		1990	08	19.20052	20	09	57.86	-06	13	03.8		2 675
1990	QO3		1990	08	23.43941	23	19	58.69	-08	04	07.1	17.0	9 675
1990	QO3		1990	08	23.47517	23	19	57.10	-08	04	10.7		9 675
1990	QO3		1990	08	25.35955	23	18	33.30	-08	07	33.0	17.2	9 675
1990	QO3		1990	08	25.39792	23	18	31.42	-08	07	36.5		9 675
1990	QO3		1990	08	27.37031	23	17	00.68	-08	11	16.0	17.0	9 675
1990	QO3		1990	08	27.40330	23	16	59.04	-08	11	17.9		9 675
1990	QP3		1990	08	23.43941	23	20	28.18	-08	14	10.8	17.2	9 675
1990	QP3		1990	08	23.47517	23	20	26.82	-08	14	21.4		9 675
1990	QP3		1990	08	25.35955	23	19	18.20	-08	23	37.9	17.2	9 675
1990	QP3		1990	08	25.39792	23	19	16.72	-08	23	48.3		9 675
1990	QP3		1990	08	27.37031	23	18	01.46	-08	33	41.3	17.2	9 675
1990	QP3		1990	08	27.40330	23	18	00.14	-08	33	49.1		9 675
1990	QQ3	*	1990	08	18.40920	23	07	05.57	-11	57	38.3	16.3	2 675
1990	QQ3		1990	08	18.43958	23	07	05.14	-11	58	06.4		2 675
1990	QQ3		1990	08	20.38802	23	06	40.30	-12	28	28.1		2 675
1990	QQ3		1990	08	20.41788	23	06	39.86	-12	28	56.7		2 675
1990	QR3	*	1990	08	24.45052	00	47	38.60	+06	19	25.6	17.2	9 675
1990	QR3		1990	08	24.48646	00	47	37.59	+06	19	28.1		9 675
1990	QS3	*	1990	08	20.40880	23	32	05.13	-03	47	26.5	16.5	2 675
1990	QS3		1990	08	20.43559	23	32	04.41	-03	47	37.2		2 675
1990	QS3		1990	08	21.42934	23	31	38.21	-03	55	04.1		2 675
1990	QS3		1990	08	21.45833	23	31	37.17	-03	55	18.5		2 675
1990	QT3		1990	08	22.40318	23	28	20.88	-06	32	14.6	16.5	9 675
1990	QU3	*	1990	08	22.39288	22	48	53.44	-11	48	59.6	17.0	9 675
1990	QU3		1990	08	22.43351	22	48	51.20	-11	49	14.7		9 675
1990	QU3		1990	08	27.36354	22	44	23.30	-12	20	13.2	17.2	9 675
1990	QU3		1990	08	27.39615	22	44	21.38	-12	20	25.1		9 675
1990	QU3		1990	08	29.40694	22	42	28.96	-12	32	43.1	17.0	9 675
1990	QU3		1990	08	29.44375	22	42	26.76	-12	32	55.8		9 675

1990	QV3	*	1990	08	22.39288	22	50	54.48	-10	41	15.5	16.8	9 675
1990	QV3		1990	08	22.43351	22	50	52.03	-10	41	22.0		9 675
1990	QV3		1990	08	27.36354	22	46	03.66	-10	54	42.5	16.5	9 675
1990	QV3		1990	08	27.39615	22	46	01.66	-10	54	46.6		9 675
1990	QV3		1990	08	29.40694	22	44	01.41	-11	00	02.1	16.8	9 675
1990	QV3		1990	08	29.44375	22	43	59.08	-11	00	07.6		9 675
1990	QW3	*	1990	08	22.40318	23	15	01.35	-03	24	28.7	17.5	9 675
1990	QW3		1990	08	22.44363	23	14	59.29	-03	24	36.6		9 675
1990	QW3		1990	08	23.43941	23	14	10.18	-03	27	56.5	17.5	9 675
1990	QW3		1990	08	23.47517	23	14	08.14	-03	28	04.2		9 675
1990	QW3		1990	08	27.37031	23	10	44.79	-03	42	26.9	17.5	9 675
1990	QW3		1990	08	27.40330	23	10	42.90	-03	42	33.3		9 675
1990	QX3	*	1990	08	22.40318	23	15	35.55	-04	53	52.5	17.5	9 675
1990	QX3		1990	08	22.44363	23	15	33.82	-04	53	47.9		9 675
1990	QX3		1990	08	23.43941	23	14	55.92	-04	51	30.7	17.5	9 675
1990	QX3		1990	08	23.47517	23	14	54.37	-04	51	27.0		9 675
1990	QX3		1990	08	27.37031	23	12	13.41	-04	43	29.3	17.5	9 675
1990	QX3		1990	08	27.40330	23	12	11.86	-04	43	25.1		9 675
1990	QY3	*	1990	08	22.40318	23	17	42.69	-04	23	54.4	17.2	9 675
1990	QY3		1990	08	22.44363	23	17	40.58	-04	24	02.5		9 675
1990	QY3		1990	08	23.43941	23	16	51.59	-04	27	24.5	16.8	9 675
1990	QY3		1990	08	23.47517	23	16	49.72	-04	27	32.1		9 675
1990	QY3		1990	08	27.37031	23	13	29.44	-04	41	35.1	17.0	9 675
1990	QY3		1990	08	27.40330	23	13	27.60	-04	41	40.7		9 675
1990	QZ3	*	1990	08	22.40318	23	18	44.04	-05	20	00.2	17.5	9 675
1990	QZ3		1990	08	22.44363	23	18	42.59	-05	20	22.1		9 675
1990	QZ3		1990	08	23.43941	23	18	08.30	-05	29	09.2	17.5	9 675
1990	QZ3		1990	08	23.47517	23	18	06.92	-05	29	27.6		9 675
1990	QZ3		1990	08	27.37031	23	15	41.98	-06	05	08.6	17.5	9 675
1990	QZ3		1990	08	27.40330	23	15	40.53	-06	05	25.7		9 675
1990	QA4		1990	08	22.39288	22	52	44.34	-07	24	10.7	17.5	9 675
1990	QA4		1990	08	22.43351	22	52	42.02	-07	24	18.6		9 675
1990	QA4	*	1990	08	23.43941	22	51	44.58	-07	27	33.9	17.5	9 675
1990	QA4		1990	08	23.47517	22	51	42.39	-07	27	41.3		9 675
1990	QA4		1990	08	29.40694	22	45	51.72	-07	47	46.6	17.2	9 675
1990	QA4		1990	08	29.44375	22	45	49.43	-07	47	54.6		9 675
1990	QB4		1990	08	22.39288	22	52	32.28	-07	13	56.6	17.2	9 675
1990	QB4		1990	08	22.43351	22	52	30.58	-07	14	11.5		9 675
1990	QB4	*	1990	08	23.43941	22	51	51.52	-07	20	07.1	17.2	9 675
1990	QB4		1990	08	23.47517	22	51	50.07	-07	20	20.0		9 675
1990	QB4		1990	08	29.40694	22	47	51.26	-07	56	06.0	17.2	9 675
1990	QB4		1990	08	29.44375	22	47	49.78	-07	56	19.0		9 675
1990	QC4		1990	08	22.39288	22	53	18.72	-07	01	03.1	16.5	9 675
1990	QC4		1990	08	22.43351	22	53	16.83	-07	01	12.6		9 675
1990	QC4	*	1990	08	23.43941	22	52	31.49	-07	05	12.2	17.0	9 675
1990	QC4		1990	08	23.47517	22	52	29.83	-07	05	20.5		9 675
1990	QC4		1990	08	29.40694	22	47	52.36	-07	29	48.1	16.8	9 675
1990	QC4		1990	08	29.44375	22	47	50.56	-07	29	57.9		9 675
1990	QD4		1990	08	22.39288	22	55	42.18	-06	37	03.2	16.5	9 675
1990	QD4		1990	08	22.43351	22	55	39.94	-06	37	02.7		9 675
1990	QD4	*	1990	08	23.43941	22	54	46.28	-06	36	58.8	16.5	9 675
1990	QD4		1990	08	23.47517	22	54	44.27	-06	36	58.6		9 675
1990	QD4		1990	08	27.37031	22	51	07.66	-06	37	24.1	16.5	9 675
1990	QD4		1990	08	27.40330	22	51	05.65	-06	37	24.3		9 675
1990	QD4		1990	08	29.40694	22	49	09.84	-06	37	55.1	16.8	9 675
1990	QD4		1990	08	29.44375	22	49	07.61	-06	37	55.9		9 675
1990	QE4	*	1990	08	23.43941	22	56	05.27	-06	05	37.6	16.2	9 675
1990	QE4		1990	08	23.47517	22	56	04.44	-06	06	15.9		9 675
1990	QE4		1990	08	27.37031	22	54	38.48	-07	15	36.3	16.2	9 675

1990	QE4		1990	08	27.40330	22	54	37.59	-07	16	10.5		9 675
1990	QE4		1990	08	29.40694	22	53	49.03	-07	52	31.2	16.2	9 675
1990	QE4		1990	08	29.44375	22	53	48.01	-07	53	11.2		9 675
1990	QF4	*	1990	08	23.43941	22	57	41.48	-08	15	17.9	17.0	9 675
1990	QF4		1990	08	23.47517	22	57	39.69	-08	15	36.6		9 675
1990	QF4		1990	08	27.37031	22	54	29.97	-08	49	10.8	17.0	9 675
1990	QF4		1990	08	27.40330	22	54	28.27	-08	49	27.2		9 675
1990	QF4		1990	08	29.40694	22	52	46.92	-09	06	57.5	17.0	9 675
1990	QF4		1990	08	29.44375	22	52	45.04	-09	07	16.9		9 675
1990	QG4	*	1990	08	23.43941	22	58	09.56	-06	51	39.6	16.8	9 675
1990	QG4		1990	08	23.47517	22	58	07.99	-06	51	49.6		9 675
1990	QG4		1990	08	27.37031	22	55	22.36	-07	10	23.3	16.8	9 675
1990	QG4		1990	08	27.40330	22	55	20.92	-07	10	31.2		9 675
1990	QG4		1990	08	29.40694	22	53	53.40	-07	20	14.7	16.8	9 675
1990	QG4		1990	08	29.44375	22	53	51.78	-07	20	24.9		9 675
1990	QH4	*	1990	08	23.43941	23	00	16.67	-08	24	52.7	17.5	9 675
1990	QH4		1990	08	23.47517	23	00	14.69	-08	24	54.6		9 675
1990	QH4		1990	08	26.36111	22	57	44.39	-08	26	51.4	17.5	9 675
1990	QH4		1990	08	26.39948	22	57	42.12	-08	26	53.5		9 675
1990	QH4		1990	08	27.37031	22	56	49.67	-08	27	38.5	17.5	9 675
1990	QH4		1990	08	27.40330	22	56	47.77	-08	27	39.2		9 675
1990	QH4		1990	08	29.40694	22	54	56.78	-08	29	14.3	17.5	9 675
1990	QH4		1990	08	29.44375	22	54	54.60	-08	29	15.3		9 675
1990	QJ4	*	1990	08	23.43941	23	03	49.69	-06	10	35.5	17.5	9 675
1990	QJ4		1990	08	23.47517	23	03	47.88	-06	10	50.1		9 675
1990	QJ4		1990	08	27.37031	23	00	37.10	-06	37	38.4	17.5	9 675
1990	QJ4		1990	08	27.40330	23	00	35.39	-06	37	50.8		9 675
1990	QK4	*	1990	08	23.43941	23	04	56.13	-05	54	26.2	17.2	9 675
1990	QK4		1990	08	23.47517	23	04	54.74	-05	54	40.1		9 675
1990	QK4		1990	08	27.37031	23	02	28.58	-06	20	19.9	17.2	9 675
1990	QK4		1990	08	27.40330	23	02	27.18	-06	20	32.3		9 675
1990	QL4	*	1990	08	23.43941	23	08	46.16	-08	24	03.0	17.5	9 675
1990	QL4		1990	08	23.47517	23	08	44.47	-08	24	07.1		9 675
1990	QL4		1990	08	26.36111	23	06	26.29	-08	30	03.5	17.2	9 675
1990	QL4		1990	08	26.39948	23	06	24.39	-08	30	08.1		9 675
1990	QL4		1990	08	27.37031	23	05	36.84	-08	32	12.3	17.5	9 675
1990	QL4		1990	08	27.40330	23	05	35.18	-08	32	13.6		9 675
1990	QM4	*	1990	08	23.43941	23	09	02.28	-09	04	16.8	17.0	9 675
1990	QM4		1990	08	23.47517	23	09	00.45	-09	04	36.5		9 675
1990	QM4		1990	08	27.37031	23	05	45.68	-09	38	35.3	17.0	9 675
1990	QM4		1990	08	27.40330	23	05	43.94	-09	38	50.1		9 675
1990	QN4	*	1990	08	23.43941	23	10	29.93	-03	48	35.9	16.0	9 675
1990	QN4		1990	08	23.47517	23	10	28.77	-03	48	45.0		9 675
1990	QN4		1990	08	27.37031	23	08	15.59	-04	09	53.6	16.0	9 675
1990	QN4		1990	08	27.40330	23	08	14.32	-04	10	02.7		9 675
1990	QO4	*	1990	08	23.43941	23	12	41.62	-08	57	29.7	17.5	9 675
1990	QO4		1990	08	23.47517	23	12	39.87	-08	57	35.0		9 675
1990	QO4		1990	08	26.36111	23	10	20.63	-09	03	02.1	17.2	9 675
1990	QO4		1990	08	26.39948	23	10	18.71	-09	03	05.6		9 675
1990	QP4	*	1990	08	23.43941	23	17	03.20	-05	25	13.5	17.5	9 675
1990	QP4		1990	08	23.47517	23	17	01.42	-05	25	19.8		9 675
1990	QP4		1990	08	27.37031	23	13	56.39	-05	36	59.5	17.5	9 675
1990	QP4		1990	08	27.40330	23	13	54.69	-05	37	04.3		9 675
1990	QQ4	*	1990	08	24.38316	23	09	07.41	-15	34	32.7	16.0	9 675
1990	QQ4		1990	08	24.42188	23	09	05.31	-15	34	41.4		9 675
1990	QQ4		1990	08	26.38160	23	07	25.65	-15	41	47.9	17.0	9 675
1990	QQ4		1990	08	26.41736	23	07	23.82	-15	41	53.9		9 675
1990	QR4	*	1990	08	24.38316	23	09	11.53	-15	35	51.7	17.0	9 675
1990	QR4		1990	08	24.42188	23	09	09.94	-15	36	08.1		9 675

1990	QR4		1990	08	26.36111	23	07	55.84	-15	49	26.8	9 675
1990	QR4		1990	08	26.38160	23	07	55.05	-15	49	34.8	16.0 9 675
1990	QR4		1990	08	26.39948	23	07	54.30	-15	49	44.2	9 675
1990	QR4		1990	08	26.41736	23	07	53.63	-15	49	49.5	9 675
1990	QS4	*	1990	08	24.38316	23	12	50.75	-14	19	51.1	16.8 9 675
1990	QS4		1990	08	24.42188	23	12	48.84	-14	20	12.6	9 675
1990	QS4		1990	08	26.36111	23	11	18.99	-14	37	22.1	16.8 9 675
1990	QS4		1990	08	26.38160	23	11	17.99	-14	37	33.6	16.8 9 675
1990	QS4		1990	08	26.39948	23	11	17.05	-14	37	42.9	9 675
1990	QS4		1990	08	26.41736	23	11	16.21	-14	37	51.6	9 675
1990	QS4		1990	08	29.39844	23	08	50.61	-15	03	51.8	9 675
1990	QT4	*	1990	08	24.38316	23	21	56.82	-14	30	41.8	17.0 9 675
1990	QT4		1990	08	24.42188	23	21	54.52	-14	30	43.7	9 675
1990	QT4		1990	08	26.38160	23	19	59.03	-14	32	03.0	17.0 9 675
1990	QT4		1990	08	26.41736	23	19	56.78	-14	32	04.2	9 675
1990	QT4		1990	08	29.39844	23	16	53.89	-14	33	40.9	9 675
1990	QU4	*	1990	08	24.38316	23	22	40.49	-19	19	35.4	16.5 9 675
1990	QU4		1990	08	24.42188	23	22	38.53	-19	19	51.1	9 675
1990	QU4		1990	08	26.38160	23	21	06.51	-19	31	22.3	16.5 9 675
1990	QU4		1990	08	26.41736	23	21	04.68	-19	31	33.5	9 675
1990	QU4		1990	08	27.37865	23	20	17.87	-19	37	03.1	16.5 9 675
1990	QU4		1990	08	27.40938	23	20	16.25	-19	37	13.5	9 675
1990	QU4		1990	08	29.38993	23	18	36.38	-19	47	58.0	16.5 9 675
1990	QU4		1990	08	29.39844	23	18	35.75	-19	47	59.5	9 675
1990	QU4		1990	08	29.42412	23	18	34.50	-19	48	08.2	9 675
1990	QV4	*	1990	08	24.38316	23	24	32.83	-14	22	20.1	17.0 9 675
1990	QV4		1990	08	24.42188	23	24	31.42	-14	22	39.3	9 675
1990	QV4		1990	08	26.38160	23	23	20.75	-14	38	37.6	17.0 9 675
1990	QV4		1990	08	26.41736	23	23	19.31	-14	38	53.6	9 675
1990	QV4		1990	08	29.39844	23	21	26.20	-15	03	06.2	9 675
1990	QW4	*	1990	08	24.38316	23	25	51.75	-13	45	52.9	17.5 9 675
1990	QW4		1990	08	24.42188	23	25	50.09	-13	46	15.9	9 675
1990	QW4		1990	08	26.38160	23	24	27.76	-14	06	25.5	17.5 9 675
1990	QW4		1990	08	26.41736	23	24	26.05	-14	06	47.1	9 675
1990	QW4		1990	08	29.39844	23	22	11.90	-14	37	33.8	9 675
1990	QX4	*	1990	08	24.38316	23	26	14.66	-15	32	45.6	16.5 9 675
1990	QX4		1990	08	24.42188	23	26	12.81	-15	32	55.2	9 675
1990	QX4		1990	08	26.38160	23	24	44.89	-15	41	29.5	16.5 9 675
1990	QX4		1990	08	26.41736	23	24	43.09	-15	41	38.1	9 675
1990	QX4		1990	08	29.39844	23	22	18.62	-15	54	04.8	9 675
1990	QY4	*	1990	08	24.38316	23	29	53.82	-15	05	26.0	17.0 9 675
1990	QY4		1990	08	24.42188	23	29	51.79	-15	05	38.0	9 675
1990	QY4		1990	08	26.41736	23	28	06.74	-15	16	37.0	17.0 9 675
1990	QY4		1990	08	29.39844	23	25	21.54	-15	32	46.6	9 675
1990	QZ4	*	1990	08	24.38316	23	30	22.57	-13	50	37.5	16.0 9 675
1990	QZ4		1990	08	24.42188	23	30	21.45	-13	51	03.6	9 675
1990	QZ4		1990	08	26.38160	23	29	24.63	-14	12	59.0	16.0 9 675
1990	QZ4		1990	08	26.41736	23	29	23.46	-14	13	23.0	9 675
1990	QZ4		1990	08	29.39844	23	27	50.15	-14	46	51.2	9 675
1990	QA5	*	1990	08	24.38316	23	31	11.08	-16	14	58.5	17.5 9 675
1990	QA5		1990	08	24.42188	23	31	09.28	-16	15	05.1	9 675
1990	QA5		1990	08	26.38160	23	29	39.56	-16	21	22.8	17.0 9 675
1990	QA5		1990	08	26.41736	23	29	37.54	-16	21	28.9	9 675
1990	QA5		1990	08	29.39844	23	27	14.49	-16	30	39.6	9 675
1990	QB5	*	1990	08	24.38316	23	37	03.26	-14	03	20.5	17.5 9 675
1990	QB5		1990	08	24.42188	23	37	01.65	-14	03	35.2	9 675
1990	QB5		1990	08	26.38160	23	35	42.62	-14	15	55.7	17.5 9 675
1990	QB5		1990	08	26.41736	23	35	40.90	-14	16	09.4	9 675
1990	QB5		1990	08	29.39844	23	33	30.40	-14	34	55.7	9 675

1990	QC5		1990	08	23.43941	23	11	29.56	-09	23	29.3	16.8	9 675
1990	QC5		1990	08	23.47517	23	11	27.43	-09	23	39.2		9 675
1990	QC5	*	1990	08	25.35955	23	09	39.05	-09	31	39.1	16.8	9 675
1990	QC5		1990	08	25.39792	23	09	36.57	-09	31	51.8	16.2	9 675
1990	QC5		1990	08	26.36111	23	08	39.90	-09	35	57.6	16.5	9 675
1990	QC5		1990	08	26.39948	23	08	37.53	-09	36	07.0		9 675
1990	QC5		1990	08	27.37031	23	07	39.56	-09	40	19.3	16.8	9 675
1990	QC5		1990	08	27.40330	23	07	37.46	-09	40	25.4		9 675
1990	QD5		1990	08	23.43941	23	14	13.15	-08	47	07.7	17.5	9 675
1990	QD5		1990	08	23.47517	23	14	11.53	-08	47	28.6		9 675
1990	QD5	*	1990	08	25.35955	23	12	47.62	-09	04	43.1	17.8	9 675
1990	QD5		1990	08	25.39792	23	12	45.77	-09	05	03.7		9 675
1990	QD5		1990	08	26.36111	23	12	01.15	-09	13	59.0	18.0	9 675
1990	QD5		1990	08	26.39948	23	11	59.30	-09	14	21.2		9 675
1990	QD5		1990	08	27.37031	23	11	13.35	-09	23	24.4	17.5	9 675
1990	QD5		1990	08	27.40330	23	11	11.73	-09	23	43.8		9 675
1990	QE5		1990	08	23.43941	23	14	33.75	-10	02	01.8	17.2	9 675
1990	QE5		1990	08	23.47517	23	14	31.79	-10	02	06.0		9 675
1990	QE5	*	1990	08	25.35955	23	12	48.43	-10	05	22.3	17.2	9 675
1990	QE5		1990	08	25.39792	23	12	46.16	-10	05	25.4		9 675
1990	QE5		1990	08	26.36111	23	11	51.86	-10	07	06.9	17.2	9 675
1990	QE5		1990	08	26.39948	23	11	49.53	-10	07	11.2		9 675
1990	QE5		1990	08	27.37031	23	10	53.85	-10	08	55.9	17.2	9 675
1990	QE5		1990	08	27.40330	23	10	51.89	-10	08	57.2		9 675
1990	QF5		1990	08	23.43941	23	15	03.20	-09	22	56.7	17.0	9 675
1990	QF5		1990	08	23.47517	23	15	01.47	-09	22	59.9		9 675
1990	QF5	*	1990	08	25.35955	23	13	31.87	-09	25	23.0	17.5	9 675
1990	QF5		1990	08	25.39792	23	13	29.92	-09	25	25.5		9 675
1990	QF5		1990	08	26.36111	23	12	43.32	-09	26	39.8	17.0	9 675
1990	QF5		1990	08	26.39948	23	12	41.37	-09	26	43.6		9 675
1990	QF5		1990	08	27.37031	23	11	53.87	-09	28	00.5	17.2	9 675
1990	QF5		1990	08	27.40330	23	11	52.16	-09	28	00.9		9 675
1990	QG5	*	1990	08	25.35955	23	20	28.56	-09	46	56.8	16.5	9 675
1990	QG5		1990	08	25.39792	23	20	27.12	-09	47	11.9		9 675
1990	QG5		1990	08	26.36111	23	19	52.32	-09	53	31.5	17.5	9 675
1990	QG5		1990	08	26.39948	23	19	50.74	-09	53	47.5		9 675
1990	QH5	*	1990	08	25.35955	23	20	30.76	-09	57	34.9	17.5	9 675
1990	QH5		1990	08	25.39792	23	20	28.67	-09	57	44.8		9 675
1990	QH5		1990	08	26.36111	23	19	38.72	-10	01	52.6	17.5	9 675
1990	QH5		1990	08	26.39948	23	19	36.57	-10	02	00.9		9 675
1990	QJ5		1990	08	23.43941	23	22	42.03	-07	54	02.0	17.2	9 675
1990	QJ5		1990	08	23.47517	23	22	40.53	-07	54	09.2		9 675
1990	QJ5	*	1990	08	25.35955	23	21	24.84	-08	00	23.2	17.2	9 675
1990	QJ5		1990	08	25.39792	23	21	23.15	-08	00	29.7		9 675
1990	QJ5		1990	08	27.37031	23	19	58.13	-08	07	17.5	17.2	9 675
1990	QJ5		1990	08	27.40330	23	19	56.54	-08	07	22.6		9 675
1990	QK5	*	1990	08	26.36111	22	49	47.00	-13	42	26.5		9 675
1990	QK5		1990	08	26.39948	22	49	44.89	-13	42	38.4		9 675
1990	QK5		1990	08	27.36354	22	48	56.47	-13	47	07.5	17.5	9 675
1990	QK5		1990	08	27.39615	22	48	54.65	-13	47	16.3		9 675
1990	QL5		1990	08	27.36354	22	29	48.36	-10	41	09.4	17.2	9 675
1990	QL5		1990	08	27.39615	22	29	46.82	-10	41	24.4		9 675
1990	QL5	*	1990	08	29.40694	22	28	18.48	-10	55	29.8	17.0	9 675
1990	QL5		1990	08	29.44375	22	28	16.74	-10	55	45.1		9 675
1990	QM5		1990	08	27.36354	22	33	30.28	-11	36	23.1	17.5	9 675
1990	QM5		1990	08	27.39615	22	33	28.87	-11	36	33.6		9 675
1990	QM5	*	1990	08	29.40694	22	32	03.51	-11	48	04.8	17.5	9 675
1990	QM5		1990	08	29.44375	22	32	01.91	-11	48	17.0		9 675
1990	QN5		1990	08	27.36354	22	36	51.13	-11	28	39.5	17.2	9 675

1990	QN5		1990	08	27.39615	22	36	49.28	-11	28	41.6	9 675
1990	QN5	*	1990	08	29.40694	22	34	55.55	-11	30	56.6	17.2 9 675
1990	QN5		1990	08	29.44375	22	34	53.40	-11	30	58.6	9 675
1990	QO5		1990	08	27.36354	22	45	28.51	-11	21	21.4	17.5 9 675
1990	QO5		1990	08	27.39615	22	45	26.71	-11	21	30.5	9 675
1990	QO5	*	1990	08	29.40694	22	43	35.47	-11	32	54.1	17.5 9 675
1990	QO5		1990	08	29.44375	22	43	33.32	-11	33	05.9	9 675
1990	RA		1990	08	22.39288	22	47	45.63	-11	35	42.1	15.8 9 675
1990	RA		1990	08	22.43351	22	47	44.02	-11	35	58.0	9 675
1990	RA		1990	08	27.36354	22	44	38.47	-12	08	40.9	15.5 9 675
1990	RA		1990	08	27.39615	22	44	37.04	-12	08	52.8	9 675
1990	RA		1990	08	29.40694	22	43	16.23	-12	22	05.1	15.5 9 675
1990	RA		1990	08	29.44375	22	43	14.53	-12	22	18.7	9 675
1990	SB	*	1990	09	16.47205	01	38	37.65	+12	01	54.7	16.0 9 675
1990	SB		1990	09	16.50451	01	38	35.55	+12	01	05.7	9 675
1990	SB		1990	09	18.42344	01	36	40.52	+11	13	02.4	15.8 9 675
1990	SB		1990	09	18.45625	01	36	38.40	+11	12	10.8	9 675
1990	SB		1990	09	20.40602	01	34	35.39	+10	22	59.4	16.0 9 675
1990	SB		1990	09	20.48281	01	34	30.10	+10	21	02.7	9 675
4577	P-L	*	1960	09	24.41183	00	23	07.11	-01	08	33.7	17.2 4 675
4577	P-L		1960	09	26.31530	00	21	42.32	-01	28	50.5	4 675
4577	P-L		1960	09	27.40836	00	20	53.10	-01	40	28.3	4 675
4577	P-L		1960	09	28.39725	00	20	08.57	-01	50	58.7	4 675
4577	P-L		1960	10	17.28198	00	06	53.18	-04	54	50.6	4 675
4577	P-L		1960	10	22.23406	00	04	09.47	-05	33	47.3	4 675
4577	P-L		1960	10	25.25350	00	02	43.96	-05	54	57.0	4 675
4577	P-L		1960	10	26.31531	00	02	16.67	-06	01	54.0	4 675
4581	P-L		1990	08	26.36111	22	54	55.55	-12	48	21.1	9 675
4581	P-L		1990	08	26.39948	22	54	53.32	-12	48	34.3	9 675
3099	T-2		1973	09	19.21250	00	10	29.44	-02	00	23.9	4 675
3099	T-2		1973	09	19.26354	00	10	27.33	-02	00	46.0	4 675
3099	T-2		1973	09	20.27795	00	09	47.01	-02	07	57.0	4 675
3099	T-2		1973	09	24.37431	00	07	01.18	-02	37	02.4	4 675
3099	T-2		1973	09	24.44167	00	06	58.40	-02	37	29.8	4 675
3099	T-2		1973	09	25.26875	00	06	24.99	-02	43	22.4	4 675
3099	T-2		1973	09	25.33299	00	06	22.25	-02	43	48.5	4 675
3099	T-2		1973	09	29.27986	00	03	41.62	-03	11	25.1	4 675
3099	T-2		1973	09	29.34375	00	03	38.97	-03	11	52.6	4 675
3099	T-2		1973	09	30.23524	00	03	02.80	-03	18	00.5	4 675
3099	T-2	*	1973	09	30.30174	00	03	00.15	-03	18	28.6	18.2 4 675
3099	T-2		1973	10	04.31493	00	00	19.99	-03	45	34.5	4 675
3099	T-2		1973	10	04.37674	00	00	17.52	-03	45	59.3	4 675
3099	T-2		1973	10	05.34167	23	59	39.67	-03	52	19.7	4 675
3099	T-2		1973	10	05.40347	23	59	37.24	-03	52	44.3	4 675
3236	T-2		1990	08	24.38316	23	25	29.11	-13	48	23.1	18.0 9 675
3236	T-2		1990	08	24.42188	23	25	26.82	-13	48	35.3	9 675
3236	T-2		1990	08	25.35955	23	24	35.89	-13	53	38.3	17.2 9 675
3236	T-2		1990	08	25.39792	23	24	33.72	-13	53	48.6	9 675
3236	T-2		1990	08	26.38160	23	23	39.15	-13	59	09.9	18.0 9 675
3236	T-2		1990	08	26.41736	23	23	37.06	-13	59	20.7	9 675
4069	T-2		1973	09	19.22500	00	29	43.86	-02	07	08.8	4 675
4069	T-2		1973	09	19.27865	00	29	41.66	-02	07	38.1	4 675
4069	T-2		1973	09	20.30278	00	29	00.65	-02	16	36.2	4 675
4069	T-2		1973	09	24.38750	00	26	10.18	-02	52	36.9	4 675
4069	T-2		1973	09	24.45434	00	26	07.21	-02	53	12.4	4 675
4069	T-2		1973	09	25.28125	00	25	31.92	-03	00	29.7	4 675
4069	T-2		1973	09	25.34601	00	25	29.00	-03	01	03.8	4 675
4069	T-2	*	1973	09	29.29219	00	22	36.19	-03	35	25.2	16.7 4 675
4069	T-2		1973	09	29.35694	00	22	33.18	-03	35	58.6	4 675

4069	T-2	1973	09	30.24826	00	21	53.86	-03	43	32.8	4 675
4069	T-2	1973	09	30.31476	00	21	50.71	-03	44	08.2	4 675
4069	T-2	1973	10	04.32708	00	18	54.25	-04	17	24.3	4 675
4069	T-2	1973	10	04.38889	00	18	51.42	-04	17	53.0	4 675
4069	T-2	1973	10	05.35382	00	18	09.54	-04	25	33.2	4 675
4069	T-2	1973	10	05.41597	00	18	06.70	-04	26	03.3	4 675
4171	T-3	1990	08	24.38316	23	24	17.38	-14	56	14.4	9 675
4171	T-3	1990	08	26.38160	23	22	32.33	-15	09	03.6	18.0 9 675
4171	T-3	1990	08	26.41736	23	22	30.33	-15	09	17.5	9 675
51		1990	08	17.27847	21	12	29.57	-06	02	47.6	10.0 2 675
51		1990	08	17.30955	21	12	27.85	-06	03	02.4	2 675
51		1990	08	19.27743	21	10	46.74	-06	19	29.6	2 675
51		1990	08	19.30642	21	10	45.15	-06	19	43.8	2 675
58		1971	03	24.40486	12	43	11.85	-00	41	51.4	4 675
58		1971	03	26.31007	12	41	43.72	-00	28	06.3	13.1 4 675
58		1971	03	26.34896	12	41	41.80	-00	27	50.8	4 675
58		1971	03	27.35208	12	40	55.07	-00	20	38.2	4 675
58		1971	04	02.43993	12	36	06.13	+00	22	45.8	4 675
65		1990	08	22.40318	23	43	15.40	-02	55	13.4	9 675
65		1990	08	22.44363	23	43	14.11	-02	55	24.1	9 675
65		1990	08	24.43177	23	42	12.21	-03	04	08.0	9 675
65		1990	08	24.46788	23	42	11.00	-03	04	17.7	9 675
65		1990	08	28.40590	23	40	00.06	-03	22	30.4	9 675
65		1990	08	28.43906	23	39	58.89	-03	22	40.1	9 675
73		1990	08	24.45052	00	52	50.82	+05	07	36.3	9 675
73		1990	08	24.48646	00	52	50.23	+05	07	34.2	9 675
94		1971	03	24.37118	12	01	57.28	+00	19	27.1	4 675
94		1971	03	25.24340	12	01	16.05	+00	22	07.6	13.3 4 675
94		1971	03	25.28715	12	01	13.94	+00	22	16.3	4 675
94		1971	03	26.25208	12	00	28.62	+00	25	12.9	4 675
94		1971	03	27.31181	11	59	38.92	+00	28	27.0	4 675
94		1971	04	02.41285	11	54	59.58	+00	46	16.4	4 675
117		1990	08	24.43177	00	04	44.04	+01	46	12.3	9 675
117		1990	08	24.46788	00	04	42.62	+01	46	14.2	9 675
117		1990	08	29.46160	00	01	16.92	+01	49	17.8	9 675
117		1990	08	29.49927	00	01	15.41	+01	49	18.6	9 675
125		1990	08	23.43941	23	01	52.98	-04	49	33.9	9 675
125		1990	08	23.47517	23	01	51.40	-04	49	48.3	9 675
125		1990	08	27.37031	22	59	00.52	-05	14	45.4	9 675
125		1990	08	27.40330	22	58	58.98	-05	14	58.2	9 675
128		1990	08	26.41736	23	29	08.46	-14	38	42.6	9 675
128		1990	08	29.39844	23	27	00.95	-14	56	50.7	9 675
160		1971	03	24.42015	12	39	08.08	-04	06	56.7	4 675
160		1971	03	25.33090	12	38	21.71	-04	03	13.6	4 675
160		1971	03	26.29653	12	37	31.99	-03	59	15.9	13.9 4 675
160		1971	03	26.33611	12	37	29.97	-03	59	05.2	4 675
160		1971	03	27.33854	12	36	38.05	-03	54	53.9	4 675
160		1971	04	02.42604	12	31	22.06	-03	29	23.9	4 675
167		1971	03	24.40486	12	27	53.35	-01	48	04.0	4 675
167		1971	03	24.42015	12	27	52.55	-01	47	56.7	4 675
167		1971	03	25.33090	12	27	10.23	-01	42	40.3	4 675
167		1971	03	26.29653	12	26	25.03	-01	37	04.9	14.1 4 675
167		1971	03	26.31007	12	26	24.47	-01	37	02.4	4 675
167		1971	03	26.33611	12	26	23.15	-01	36	50.2	4 675
167		1971	03	26.34896	12	26	22.54	-01	36	49.6	4 675
167		1971	03	27.35208	12	25	35.61	-01	30	58.5	4 675
167		1971	04	02.43993	12	20	49.98	-00	55	53.9	4 675
209		1990	08	27.36354	22	36	36.18	-13	44	51.3	9 675
209		1990	08	27.39615	22	36	34.49	-13	44	57.3	9 675

243	1990	08	18.40313	23	07	42.01	-05	07	58.6	14.0	2 675
243	1990	08	18.43333	23	07	40.77	-05	08	05.5		2 675
243	1990	08	20.35608	23	06	23.43	-05	15	20.4		2 675
243	1990	08	20.38177	23	06	22.27	-05	15	25.0		2 675
243	1990	08	23.43941	23	04	12.76	-05	27	35.3		9 675
243	1990	08	23.47517	23	04	11.17	-05	27	45.0		9 675
243	1990	08	27.37031	23	01	17.35	-05	44	06.8		9 675
243	1990	08	27.40330	23	01	15.79	-05	44	15.7		9 675
277	1971	03	24.42015	12	19	50.68	-03	29	26.6		4 675
277	1971	03	25.33090	12	19	08.20	-03	24	41.8		4 675
277	1971	03	26.29653	12	18	23.17	-03	19	37.6	15.4	4 675
277	1971	03	26.33611	12	18	21.25	-03	19	26.0		4 675
277	1971	03	27.32500	12	17	35.57	-03	14	18.9		4 675
277	1971	04	02.40000	12	12	53.29	-02	42	17.3		4 675
313	1990	08	24.43177	00	05	35.40	+02	29	21.2		9 675
313	1990	08	24.46788	00	05	34.26	+02	29	06.4		9 675
313	1990	08	29.46160	00	02	48.09	+01	51	59.4		9 675
313	1990	08	29.49927	00	02	46.86	+01	51	44.0		9 675
366	1971	03	24.38924	12	15	02.80	-06	51	22.3		4 675
366	1971	03	25.27326	12	14	19.22	-06	49	10.8		4 675
366	1971	03	25.31562	12	14	17.10	-06	49	04.8	14.1	4 675
366	1971	03	26.26771	12	13	30.23	-06	46	41.7		4 675
366	1971	03	27.32500	12	12	38.09	-06	44	02.7		4 675
366	1971	04	02.40000	12	07	40.77	-06	27	53.4		4 675
386	1990	08	24.43177	23	55	01.84	-01	08	34.4		9 675
386	1990	08	24.46788	23	55	01.02	-01	09	00.6		9 675
386	1990	08	29.46160	23	53	05.96	-02	11	46.7		9 675
386	1990	08	29.49927	23	53	05.05	-02	12	12.3		9 675
388	1990	08	24.43177	00	03	52.43	-00	16	36.9		9 675
388	1990	08	24.46788	00	03	51.15	-00	16	40.1		9 675
388	1990	08	29.46160	00	00	50.45	-00	25	16.3		9 675
388	1990	08	29.49927	00	00	49.12	-00	25	20.4		9 675
421	1971	03	24.42015	12	26	46.05	-03	13	57.0		4 675
421	1971	03	25.33090	12	26	00.36	-03	07	10.7		4 675
421	1971	03	26.29653	12	25	11.89	-02	59	59.7	16.7	4 675
421	1971	03	26.33611	12	25	09.87	-02	59	41.4		4 675
421	1971	03	27.33854	12	24	19.44	-02	52	13.7		4 675
421	1971	04	02.42604	12	19	15.65	-02	07	04.6		4 675
435	1990	08	24.43177	23	50	03.41	-03	22	19.7		9 675
435	1990	08	24.46788	23	50	02.09	-03	22	26.8		9 675
435	1990	08	29.46160	23	47	00.45	-03	39	11.4		9 675
435	1990	08	29.49927	23	46	59.20	-03	39	17.4		9 675
442	1990	08	22.39288	22	37	09.32	-12	18	42.9		9 675
442	1990	08	22.43351	22	37	07.09	-12	19	02.7		9 675
442	1990	08	27.36354	22	32	44.91	-12	59	19.8		9 675
442	1990	08	27.39615	22	32	43.11	-12	59	35.2		9 675
462	1971	03	24.40486	12	26	05.58	+02	11	38.7		4 675
462	1971	03	26.31007	12	24	36.43	+02	21	47.2	14.6	4 675
462	1971	03	26.34896	12	24	34.55	+02	21	59.4		4 675
462	1971	03	27.35208	12	23	47.29	+02	27	14.6		4 675
462	1971	04	02.41285	12	19	04.29	+02	58	05.5		4 675
462	1971	04	02.43993	12	19	02.47	+02	58	16.9		4 675
465	1990	08	22.39288	22	34	39.99	-04	44	49.9		9 675
465	1990	08	22.43351	22	34	38.03	-04	44	59.2		9 675
547	1971	03	24.38924	12	05	26.86	-05	17	31.6		4 675
547	1971	03	25.27326	12	04	47.54	-05	09	50.5		4 675
547	1971	03	25.31562	12	04	45.66	-05	09	29.0	15.7	4 675
547	1971	03	26.26771	12	04	03.51	-05	01	15.3		4 675
547	1971	03	27.32500	12	03	16.63	-04	52	03.2		4 675

547		1971	04	02.40000	11	58	53.80	-03	59	13.3		4 675
551		1990	08	23.43941	22	57	51.20	-06	55	59.3		9 675
551		1990	08	23.47517	22	57	49.63	-06	56	08.9		9 675
551		1990	08	27.37031	22	54	58.05	-07	13	24.6		9 675
551		1990	08	27.40330	22	54	56.52	-07	13	34.2		9 675
551		1990	08	29.40694	22	53	25.45	-07	22	41.3		9 675
551		1990	08	29.44375	22	53	23.69	-07	22	51.1		9 675
601		1990	08	24.45052	00	58	50.81	+01	41	01.2		9 675
601		1990	08	24.48646	00	58	50.37	+01	40	45.5		9 675
671		1971	03	24.42015	12	35	12.30	-05	19	30.4		4 675
671		1971	03	25.33090	12	34	28.29	-05	17	03.4		4 675
671		1971	03	26.29653	12	33	41.14	-05	14	22.9	15.4	4 675
671		1971	03	26.33611	12	33	39.16	-05	14	17.6		4 675
671		1971	03	27.33854	12	32	50.09	-05	11	28.5		4 675
671		1971	04	02.42604	12	27	51.36	-04	54	03.5		4 675
689		1990	08	23.43941	23	01	12.33	-03	33	31.6		9 675
689		1990	08	23.47517	23	01	11.18	-03	33	51.8		9 675
689		1990	08	27.37031	22	59	07.42	-04	10	04.3		9 675
689		1990	08	27.40330	22	59	06.18	-04	10	23.7		9 675
730		1990	08	25.35955	23	22	15.19	-11	11	55.8		9 675
730		1990	08	25.39792	23	22	13.04	-11	12	12.1		9 675
740		1990	08	26.41736	23	39	55.98	-14	41	12.4		9 675
740		1990	08	29.39844	23	38	04.53	-15	01	26.0		9 675
767		1990	08	24.43177	00	04	57.96	-03	37	11.1		9 675
767		1990	08	24.46788	00	04	56.97	-03	37	20.4		9 675
767		1990	08	29.46160	00	02	31.89	-03	57	12.4		9 675
767		1990	08	29.49927	00	02	30.79	-03	57	19.9		9 675
770		1971	03	24.40486	12	32	52.53	+01	40	29.0		4 675
770		1971	03	26.31007	12	30	52.94	+01	50	12.9	15.0	4 675
770		1971	03	26.34896	12	30	50.39	+01	50	25.1		4 675
770		1971	03	27.35208	12	29	47.11	+01	55	26.7		4 675
770		1971	04	02.43993	12	23	26.00	+02	24	27.2		4 675
828		1990	08	29.46160	00	12	37.53	+01	08	48.8		9 675
828		1990	08	29.49927	00	12	36.47	+01	08	42.3		9 675
830		1971	03	24.38924	11	55	52.20	-01	24	08.7		4 675
830		1971	03	25.27326	11	55	13.02	-01	20	37.3		4 675
830		1971	03	25.31562	11	55	11.05	-01	20	27.2	15.0	4 675
830		1971	03	26.26771	11	54	28.92	-01	16	41.9		4 675
830		1971	03	27.32500	11	53	42.31	-01	12	31.5		4 675
835		1971	03	24.42015	12	19	26.47	-06	41	52.0		4 675
835		1971	03	25.33090	12	18	47.19	-06	38	09.9		4 675
835		1971	03	26.29653	12	18	05.01	-06	34	10.5	17.8	4 675
835		1971	03	26.33611	12	18	03.26	-06	34	00.3		4 675
835		1971	03	27.32500	12	17	20.20	-06	29	52.7		4 675
835		1971	03	27.33854	12	17	19.62	-06	29	49.0		4 675
835		1971	04	02.40000	12	12	57.58	-06	03	58.5		4 675
867		1971	03	24.40486	12	26	45.96	+03	57	08.7		4 675
867		1971	03	26.31007	12	25	13.60	+04	04	14.0	16.4	4 675
867		1971	03	26.34896	12	25	11.62	+04	04	22.1		4 675
867		1971	03	27.35208	12	24	22.78	+04	07	56.8		4 675
867		1971	04	02.41285	12	19	31.07	+04	28	12.8		4 675
867		1971	04	02.43993	12	19	29.65	+04	28	20.4		4 675
946		1971	03	24.40486	12	25	11.08	-00	35	44.7		4 675
946		1971	03	26.31007	12	23	44.50	-00	26	44.9	15.4	4 675
946		1971	03	26.34896	12	23	42.62	-00	26	33.4		4 675
946		1971	03	27.35208	12	22	56.90	-00	21	48.9		4 675
946		1971	04	02.41285	12	18	23.48	+00	06	01.8		4 675
946		1971	04	02.43993	12	18	22.03	+00	06	12.5		4 675
946		1990	08	23.43941	23	04	27.70	-08	08	41.3	15.4	9 675

946	1990	08	23.47517	23	04	26.20	-08	08	51.7		9	675
946	1990	08	27.37031	23	01	45.60	-08	26	07.8		9	675
946	1990	08	27.40330	23	01	44.16	-08	26	17.1		9	675
962	1990	08	24.43177	00	00	03.57	-01	44	17.6		9	675
962	1990	08	24.46788	00	00	02.47	-01	44	27.2		9	675
962	1990	08	29.46160	23	57	27.49	-02	08	05.4		9	675
962	1990	08	29.49927	23	57	26.33	-02	08	15.7		9	675
1003	1990	08	22.40318	23	37	30.60	-03	42	42.0		9	675
1003	1990	08	22.44363	23	37	29.21	-03	42	52.3		9	675
1003	1990	08	28.40590	23	33	59.20	-04	09	04.4		9	675
1003	1990	08	28.43906	23	33	57.92	-04	09	13.5		9	675
1046	1990	08	25.35955	23	10	40.17	-11	57	02.9		9	675
1071	1971	03	24.40486	12	35	10.41	+02	47	50.7		4	675
1071	1971	03	26.31007	12	33	33.70	+02	56	03.9	14.8	4	675
1071	1971	03	26.34896	12	33	31.64	+02	56	13.4		4	675
1071	1971	03	27.35208	12	32	40.35	+03	00	28.0		4	675
1071	1971	04	02.43993	12	27	30.27	+03	24	57.4		4	675
1074	1990	08	22.40318	23	19	42.89	-05	25	51.1		9	675
1074	1990	08	22.44363	23	19	41.29	-05	26	00.8		9	675
1074	1990	08	23.43941	23	19	04.34	-05	29	56.0		9	675
1074	1990	08	23.47517	23	19	02.93	-05	30	04.6		9	675
1074	1990	08	27.37031	23	16	31.27	-05	46	03.5		9	675
1074	1990	08	27.40330	23	16	29.89	-05	46	12.0		9	675
1074	1990	08	28.40590	23	15	49.18	-05	50	27.5		9	675
1074	1990	08	28.43906	23	15	47.78	-05	50	34.9		9	675
1083	1990	08	27.36354	22	29	07.19	-18	04	45.1		9	675
1083	1990	08	27.39615	22	29	05.18	-18	04	55.3		9	675
1125	1990	08	22.40318	23	27	42.96	-07	42	53.1		9	675
1125	1990	08	22.44363	23	27	41.51	-07	43	01.8		9	675
1125	1990	08	25.35955	23	25	54.36	-07	56	49.8	17.2	9	675
1125	1990	08	25.39792	23	25	52.81	-07	56	59.8		9	675
1127	1990	08	26.41736	23	19	40.37	-19	02	29.2		9	675
1127	1990	08	27.37865	23	19	05.50	-19	15	56.1		9	675
1127	1990	08	27.40938	23	19	04.33	-19	16	22.1		9	675
1127	1990	08	29.39844	23	17	48.64	-19	43	58.0		9	675
1128	1971	03	24.37118	12	19	29.48	-00	42	13.3		4	675
1128	1971	03	25.24340	12	18	46.93	-00	37	44.7	15.6	4	675
1128	1971	03	25.28715	12	18	44.69	-00	37	29.9		4	675
1128	1971	03	26.25208	12	17	57.09	-00	32	32.9		4	675
1128	1971	03	26.31007	12	17	53.94	-00	32	16.4		4	675
1128	1971	03	26.34896	12	17	51.97	-00	32	04.2		4	675
1128	1971	03	27.31181	12	17	04.45	-00	27	05.3		4	675
1128	1971	04	02.41285	12	12	05.91	+00	03	38.3		4	675
1183	1990	08	29.46160	00	13	07.23	-00	24	51.4		9	675
1183	1990	08	29.49927	00	13	05.83	-00	24	59.6		9	675
1259	1990	08	24.43177	23	54	21.05	-04	14	36.1		9	675
1259	1990	08	24.46788	23	54	19.76	-04	14	45.9		9	675
1259	1990	08	29.46160	23	51	20.19	-04	36	20.7		9	675
1259	1990	08	29.49927	23	51	18.96	-04	36	28.6		9	675
1285	1990	08	22.40318	23	29	22.43	+00	53	38.9		9	675
1285	1990	08	22.44363	23	29	20.76	+00	53	34.8		9	675
1285	1990	08	28.40590	23	25	16.96	+00	41	43.2		9	675
1285	1990	08	28.43906	23	25	15.43	+00	41	41.8		9	675
1302	1990	08	24.43177	23	56	17.43	-04	22	50.0		9	675
1302	1990	08	24.46788	23	56	16.25	-04	22	59.2		9	675
1302	1990	08	29.46160	23	53	31.08	-04	44	51.8		9	675
1302	1990	08	29.49927	23	53	29.99	-04	44	59.6		9	675
1330	1990	08	22.40318	23	31	56.28	-05	43	41.1	16.5	9	675
1330	1990	08	22.44363	23	31	54.94	-05	43	59.3		9	675

1330	1990	08	25.35955	23	30	20.89	-06	06	07.1		9 675
1330	1990	08	25.39792	23	30	19.56	-06	06	24.2		9 675
1330	1990	08	28.40590	23	28	36.59	-06	29	46.0		9 675
1330	1990	08	28.43906	23	28	35.37	-06	30	02.1		9 675
1369	1990	08	24.45052	00	57	47.20	+06	31	28.2		9 675
1369	1990	08	24.48646	00	57	46.89	+06	31	14.2		9 675
1434	1990	08	22.39288	22	46	47.67	-08	51	09.1		9 675
1434	1990	08	22.43351	22	46	46.00	-08	51	28.7		9 675
1434	1990	08	29.40694	22	42	00.06	-09	47	39.5	15.8	9 675
1434	1990	08	29.44375	22	41	58.48	-09	47	57.1		9 675
1492	1990	08	22.39288	22	55	09.20	-10	33	59.1		9 675
1492	1990	08	22.43351	22	55	06.93	-10	34	21.5		9 675
1492	1990	08	29.40694	22	48	38.88	-11	37	31.7		9 675
1492	1990	08	29.44375	22	48	36.65	-11	37	49.9		9 675
1493	1971	03	24.38924	11	55	06.89	-01	38	50.4		4 675
1493	1971	03	25.27326	11	54	17.48	-01	34	05.4		4 675
1493	1971	03	25.31562	11	54	15.02	-01	33	51.9	16.5	4 675
1493	1971	03	26.26771	11	53	21.87	-01	28	44.7		4 675
1532	1990	08	22.40318	23	25	31.27	-00	21	21.9	16.8	9 675
1532	1990	08	22.44363	23	25	29.58	-00	21	25.1		9 675
1532	1990	08	28.40590	23	21	11.39	-00	30	57.7		9 675
1532	1990	08	28.43906	23	21	09.81	-00	30	58.4		9 675
1539	1990	08	24.45052	00	38	28.73	+02	37	21.2		9 675
1539	1990	08	24.48646	00	38	28.13	+02	37	15.3		9 675
1540	1990	08	27.37865	23	35	52.24	-20	41	30.9		9 675
1540	1990	08	27.40938	23	35	50.71	-20	41	40.6		9 675
1542	1990	08	24.43177	23	48	23.87	+01	50	20.9		9 675
1542	1990	08	24.46788	23	48	22.68	+01	50	13.6		9 675
1542	1990	08	29.46160	23	45	39.32	+01	31	24.6		9 675
1542	1990	08	29.49927	23	45	38.10	+01	31	16.0		9 675
1606	1971	03	24.38924	12	18	18.25	-03	16	24.7		4 675
1606	1971	03	24.42015	12	18	16.79	-03	16	12.7		4 675
1606	1971	03	25.27326	12	17	36.19	-03	10	20.7		4 675
1606	1971	03	25.31562	12	17	33.99	-03	10	02.7	17.5	4 675
1606	1971	03	25.33090	12	17	33.30	-03	09	56.9		4 675
1606	1971	03	26.26771	12	16	48.50	-03	03	29.9		4 675
1606	1971	03	26.29653	12	16	46.96	-03	03	16.9		4 675
1606	1971	03	26.33611	12	16	45.10	-03	03	00.7		4 675
1606	1971	03	27.32500	12	15	57.53	-02	56	10.5		4 675
1606	1971	04	02.40000	12	11	06.16	-02	13	55.7		4 675
1614	1990	08	22.39288	22	47	53.61	-05	43	30.5	16.5	9 675
1614	1990	08	22.43351	22	47	51.94	-05	43	48.4		9 675
1614	1990	08	29.40694	22	43	09.16	-06	38	03.5	16.2	9 675
1614	1990	08	29.44375	22	43	07.59	-06	38	20.9		9 675
1638	1971	03	24.38924	12	14	11.72	-01	41	24.9		4 675
1638	1971	03	25.27326	12	13	26.90	-01	36	27.2		4 675
1638	1971	03	25.31562	12	13	24.71	-01	36	13.2	16.3	4 675
1638	1971	03	26.26771	12	12	36.40	-01	30	53.7		4 675
1638	1971	03	27.32500	12	11	42.38	-01	24	55.9		4 675
1638	1971	04	02.40000	12	06	34.48	-00	50	58.3		4 675
1638	1971	04	02.41285	12	06	33.94	-00	50	56.5		4 675
1649	1990	08	25.35955	23	37	49.52	-08	15	48.1		9 675
1649	1990	08	25.39792	23	37	48.12	-08	16	04.3		9 675
1662	1971	03	24.38924	12	11	24.43	-04	56	22.1		4 675
1662	1971	03	25.27326	12	10	39.83	-04	52	25.6		4 675
1662	1971	03	25.31562	12	10	37.62	-04	52	14.9	17.1	4 675
1662	1971	03	26.26771	12	09	49.57	-04	47	57.5		4 675
1662	1971	03	27.32500	12	08	55.83	-04	43	08.7		4 675
1662	1971	04	02.40000	12	03	54.07	-04	15	26.4		4 675

1748	1971	03	25.28715	12	11	31.87	+02	33	58.0		4 675
1764	1990	08	23.43941	22	58	20.65	-07	00	11.1	16.8	9 675
1764	1990	08	23.47517	22	58	19.12	-07	00	21.9		9 675
1764	1990	08	27.37031	22	55	33.32	-07	20	00.0		9 675
1764	1990	08	27.40330	22	55	31.85	-07	20	10.3		9 675
1764	1990	08	29.40694	22	54	04.51	-07	30	25.6		9 675
1764	1990	08	29.44375	22	54	02.88	-07	30	37.1		9 675
1768	1971	03	24.37118	11	57	52.02	+01	24	09.3		4 675
1768	1971	03	25.24340	11	57	03.40	+01	28	27.4	17.0	4 675
1768	1971	03	25.28715	11	57	00.89	+01	28	40.7		4 675
1768	1971	03	26.25208	11	56	07.30	+01	33	23.1		4 675
1768	1971	03	27.31181	11	55	08.64	+01	38	30.6		4 675
1791	1990	08	24.45052	00	58	25.03	+08	45	38.1		9 675
1791	1990	08	24.48646	00	58	24.42	+08	45	32.0		9 675
1850	1990	08	27.36354	22	51	31.11	-15	29	42.0	16.5	9 675
1850	1990	08	27.39615	22	51	29.14	-15	29	53.9		9 675
1855	1971	03	24.42015	12	26	41.90	-03	30	47.0		4 675
1855	1971	03	25.33090	12	25	53.79	-03	23	28.1		4 675
1855	1971	03	26.29653	12	25	02.52	-03	15	43.3	15.5	4 675
1855	1971	03	26.33611	12	25	00.28	-03	15	24.4		4 675
1855	1971	03	27.33854	12	24	06.61	-03	07	17.3		4 675
1855	1971	04	02.42604	12	18	42.75	-02	18	03.8		4 675
1858	1990	08	24.45052	01	00	52.97	+09	03	52.7	17.2	9 675
1858	1990	08	24.48646	01	00	52.43	+09	03	51.7		9 675
1864	1971	03	24.40486	12	27	39.41	-01	34	06.0		4 675
1864	1971	03	26.31007	12	22	54.17	-01	29	48.9	17.0	4 675
1864	1971	03	26.34896	12	22	48.04	-01	29	44.0		4 675
1864	1971	04	02.40000	12	04	02.46	-01	13	06.1		4 675
1870	1971	03	26.34896	12	27	36.07	-01	20	39.7		4 675
1871	1971	03	26.34896	12	38	15.92	+03	30	41.5		4 675
1872	1971	03	26.29653	12	19	11.80	-03	15	56.4	19.0	4 675
1872	1971	03	26.33611	12	19	10.64	-03	15	44.3		4 675
1873	1971	03	26.33611	12	27	18.30	-07	52	13.7		4 675
1877	1971	03	25.27326	12	13	23.80	-07	03	53.0		4 675
1880	1990	08	25.35955	23	16	20.76	-10	41	14.8		9 675
1880	1990	08	25.39792	23	16	19.02	-10	41	30.6		9 675
1944	1971	03	24.38924	11	57	21.57	-04	32	28.9		4 675
1944	1971	03	25.27326	11	56	30.99	-04	25	29.7		4 675
1944	1971	03	25.31562	11	56	28.52	-04	25	10.1	18.9	4 675
1944	1971	03	26.26771	11	55	34.19	-04	17	39.3		4 675
1944	1971	03	27.32500	11	54	33.84	-04	09	14.7		4 675
1984	1971	03	24.42015	12	25	34.56	-02	48	35.6		4 675
1984	1971	03	25.33090	12	24	54.84	-02	43	04.8		4 675
1984	1971	03	26.29653	12	24	12.50	-02	37	12.4	16.4	4 675
1984	1971	03	26.33611	12	24	10.75	-02	36	58.2		4 675
1984	1971	03	27.33854	12	23	26.64	-02	30	50.9		4 675
1984	1971	04	02.42604	12	18	59.10	-01	53	44.1		4 675
2001	1990	08	24.45052	00	50	03.09	+03	00	11.5		9 675
2001	1990	08	24.48646	00	50	01.20	+03	00	27.6		9 675
2015	1990	08	24.45052	00	38	06.65	+08	07	19.7		9 675
2015	1990	08	24.48646	00	38	05.38	+08	07	26.8		9 675
2031	1971	03	24.40486	12	31	07.70	-00	56	57.7		4 675
2031	1971	03	26.31007	12	29	20.41	-00	41	50.2	17.5	4 675
2031	1971	03	26.34896	12	29	18.09	-00	41	32.7		4 675
2031	1971	03	27.35208	12	28	21.24	-00	33	33.8		4 675
2031	1971	04	02.43993	12	22	37.24	+00	13	59.6		4 675
2046	1971	03	24.37118	12	08	45.45	+02	57	14.3		4 675
2046	1971	03	25.24340	12	08	08.36	+03	01	10.3	17.4	4 675
2046	1971	03	25.28715	12	08	06.38	+03	01	22.3		4 675

2046		1971	03	26.25208	12	07	25.03	+03	05	39.4		4 675
2046		1971	03	27.31181	12	06	39.57	+03	10	19.2		4 675
2046		1971	04	02.41285	12	02	22.37	+03	36	12.8		4 675
2046		1990	08	24.45052	01	03	45.27	+02	37	17.3	16.8	9 675
2046		1990	08	24.48646	01	03	44.85	+02	37	14.1		9 675
2051		1990	08	22.40318	23	37	38.90	-00	41	17.0	17.0	9 675
2051		1990	08	22.44363	23	37	37.46	-00	41	25.6		9 675
2051		1990	08	28.40590	23	33	57.89	-01	05	27.2		9 675
2051		1990	08	28.43906	23	33	56.56	-01	05	35.3		9 675
2058		1990	08	23.43941	23	16	25.16	-08	31	45.6		9 675
2058		1990	08	23.47517	23	16	23.67	-08	31	56.9		9 675
2058		1990	08	25.35955	23	15	07.23	-08	41	26.0		9 675
2058		1990	08	25.39792	23	15	05.56	-08	41	36.4		9 675
2058		1990	08	27.37031	23	13	42.94	-08	51	39.7		9 675
2058		1990	08	27.40330	23	13	41.46	-08	51	47.5		9 675
2095		1990	08	24.43177	00	02	57.11	+02	10	02.2		9 675
2095		1990	08	24.46788	00	02	55.73	+02	09	57.9		9 675
2095		1990	08	29.46160	23	59	49.68	+01	58	51.1		9 675
2095		1990	08	29.49927	23	59	48.30	+01	58	46.6		9 675
2166		1990	08	24.43177	23	51	21.96	-00	59	36.3	16.2	9 675
2166		1990	08	24.46788	23	51	20.78	-00	59	52.9		9 675
2166		1990	08	29.46160	23	48	34.63	-01	40	54.9		9 675
2166		1990	08	29.49927	23	48	33.20	-01	41	12.0		9 675
2188		1990	08	22.39288	22	33	50.63	-10	06	35.0	16.5	9 675
2188		1990	08	22.43351	22	33	48.72	-10	06	48.8		9 675
2188		1990	08	27.36354	22	30	03.97	-10	34	27.0		9 675
2188		1990	08	27.39615	22	30	02.42	-10	34	38.4		9 675
2188		1990	08	29.40694	22	28	29.36	-10	45	52.4	16.5	9 675
2188		1990	08	29.44375	22	28	27.60	-10	46	04.5		9 675
2203		1971	03	24.42015	12	41	35.09	-02	49	11.2		4 675
2203		1971	03	25.33090	12	40	56.26	-02	45	13.0		4 675
2203		1971	03	26.29653	12	40	15.10	-02	40	59.6	17.7	4 675
2203		1971	03	26.33611	12	40	13.36	-02	40	51.6		4 675
2203		1971	03	27.33854	12	39	30.06	-02	36	25.9		4 675
2203		1971	04	02.42604	12	35	05.95	-02	09	39.3		4 675
2208		1990	08	26.41736	23	10	59.00	-13	24	39.6		9 675
2208		1990	08	29.39844	23	09	03.38	-13	38	31.4		9 675
2248		1990	08	24.45052	00	58	07.91	+05	03	38.0		9 675
2248		1990	08	24.48646	00	58	07.23	+05	03	33.6		9 675
2250		1990	08	22.40318	23	14	24.33	-05	01	12.6		9 675
2250		1990	08	22.44363	23	14	22.84	-05	01	24.4		9 675
2250		1990	08	23.43941	23	13	47.18	-05	05	54.1		9 675
2250		1990	08	23.47517	23	13	45.71	-05	06	05.6		9 675
2250		1990	08	27.37031	23	11	18.76	-05	24	33.8		9 675
2250		1990	08	27.40330	23	11	17.41	-05	24	42.4		9 675
2313		1971	03	25.33090	12	41	22.46	-06	25	37.2		4 675
2313		1971	03	26.29653	12	40	31.58	-06	19	57.0	17.7	4 675
2313		1971	03	26.33611	12	40	29.39	-06	19	43.3		4 675
2313		1971	03	27.33854	12	39	36.67	-06	13	48.0		4 675
2313		1971	04	02.42604	12	34	08.74	-05	36	33.7		4 675
2325		1990	08	22.39288	22	47	22.05	-08	35	11.2	16.5	9 675
2325		1990	08	22.43351	22	47	20.32	-08	35	23.3		9 675
2325		1990	08	29.40694	22	42	21.70	-09	10	23.1		9 675
2325		1990	08	29.44375	22	42	20.02	-09	10	34.3		9 675
2341		1971	03	24.37118	12	11	45.59	+05	15	59.9		4 675
2341		1971	03	25.24340	12	10	51.76	+05	20	48.5	16.7	4 675
2341		1971	03	25.28715	12	10	48.98	+05	21	01.9		4 675
2350		1990	08	22.40318	23	36	32.39	-06	04	03.5		9 675
2350		1990	08	22.44363	23	36	30.83	-06	04	22.3		9 675

2350	1990	08	25.35955	23	34	41.69	-06	27	14.4		9 675
2350	1990	08	25.39792	23	34	40.08	-06	27	32.7		9 675
2350	1990	08	28.40590	23	32	34.86	-06	52	15.2		9 675
2350	1990	08	28.43906	23	32	33.29	-06	52	32.8		9 675
2356	1990	08	24.45052	00	57	04.25	+08	02	12.6	17.2	9 675
2356	1990	08	24.48646	00	57	03.76	+08	02	02.8		9 675
2371	1990	08	24.45052	00	38	51.74	+06	42	46.8		9 675
2371	1990	08	24.48646	00	38	50.82	+06	42	42.9		9 675
2394	1990	08	24.43177	00	07	43.45	-00	57	17.1		9 675
2394	1990	08	24.46788	00	07	42.41	-00	57	25.4		9 675
2394	1990	08	29.46160	00	05	21.24	-01	16	29.5		9 675
2394	1990	08	29.49927	00	05	20.20	-01	16	38.2		9 675
2395	1990	08	23.43941	23	11	55.47	-05	35	29.4		9 675
2395	1990	08	23.47517	23	11	53.90	-05	35	38.1		9 675
2395	1990	08	27.37031	23	09	13.52	-05	52	48.7		9 675
2395	1990	08	27.40330	23	09	12.08	-05	52	55.7		9 675
2409	1971	03	24.37118	11	59	33.49	+03	55	12.2		4 675
2409	1971	03	25.24340	11	58	44.21	+04	01	25.0	18.1	4 675
2409	1971	03	25.28715	11	58	41.60	+04	01	43.7		4 675
2409	1971	03	26.25208	11	57	47.02	+04	08	27.1		4 675
2409	1971	03	27.31181	11	56	47.11	+04	15	46.2		4 675
2417	1990	08	22.43351	22	41	38.89	-12	40	24.0	17.0	9 675
2417	1990	08	27.36354	22	38	07.58	-13	03	14.9	17.5	9 675
2417	1990	08	27.39615	22	38	06.10	-13	03	23.5		9 675
2422	1990	08	23.43941	22	56	29.55	-06	22	57.3		9 675
2422	1990	08	23.47517	22	56	27.63	-06	23	15.2		9 675
2422	1990	08	27.37031	22	53	01.34	-06	55	02.1		9 675
2422	1990	08	27.40330	22	52	59.48	-06	55	17.7		9 675
2422	1990	08	29.40694	22	51	10.81	-07	11	51.0		9 675
2422	1990	08	29.44375	22	51	08.85	-07	12	08.1	17.2	9 675
2429	1971	03	24.40486	12	30	13.61	+02	40	57.8		4 675
2429	1971	03	26.31007	12	28	15.09	+02	43	46.3	16.8	4 675
2429	1971	03	26.34896	12	28	12.63	+02	43	49.8		4 675
2429	1971	03	27.35208	12	27	09.82	+02	45	11.9		4 675
2429	1971	04	02.43993	12	20	51.59	+02	52	24.4		4 675
2460	1990	08	22.40318	23	24	26.43	-02	12	57.7	16.8	9 675
2460	1990	08	22.44363	23	24	24.54	-02	13	13.2		9 675
2460	1990	08	28.40590	23	19	46.59	-02	51	37.3		9 675
2460	1990	08	28.43906	23	19	44.90	-02	51	49.8		9 675
2480	1971	03	24.40486	12	28	06.26	-00	19	47.1		4 675
2480	1971	03	26.31007	12	26	09.34	-00	09	26.1	17.4	4 675
2480	1971	03	26.34896	12	26	06.88	-00	09	12.5		4 675
2480	1971	03	27.35208	12	25	05.08	-00	03	48.5		4 675
2480	1971	04	02.41285	12	18	55.08	+00	27	54.2		4 675
2480	1971	04	02.43993	12	18	53.10	+00	28	02.4		4 675
2493	1971	03	24.38924	12	17	44.65	-06	45	19.8		4 675
2493	1971	03	24.42015	12	17	42.75	-06	45	03.2		4 675
2493	1971	03	25.27326	12	17	03.91	-06	39	15.6		4 675
2493	1971	03	25.31562	12	17	01.92	-06	38	58.9	18.4	4 675
2493	1971	03	25.33090	12	17	01.42	-06	38	52.5		4 675
2493	1971	03	26.26771	12	16	18.68	-06	32	27.2		4 675
2493	1971	03	26.29653	12	16	17.26	-06	32	15.7		4 675
2493	1971	03	26.33611	12	16	15.38	-06	32	00.1		4 675
2493	1971	03	27.32500	12	15	30.15	-06	25	09.7		4 675
2493	1971	04	02.40000	12	10	55.04	-05	42	35.7		4 675
2496	1971	03	26.29653	12	41	52.70	-03	43	20.7	16.9	4 675
2496	1971	03	26.33611	12	41	50.38	-03	43	05.4		4 675
2496	1971	03	27.33854	12	40	51.77	-03	36	16.9		4 675
2496	1971	04	02.42604	12	34	51.43	-02	54	37.7		4 675

2555	1990	08	24.45052	00	38	38.12	+05	32	22.3		9	675
2555	1990	08	24.48646	00	38	37.36	+05	32	19.5		9	675
2559	1990	08	24.43177	23	51	05.97	-01	36	19.2		9	675
2559	1990	08	24.46788	23	51	04.50	-01	36	21.2		9	675
2559	1990	08	29.46160	23	47	34.51	-01	42	26.4		9	675
2559	1990	08	29.49927	23	47	33.01	-01	42	29.1		9	675
2563	1971	03	24.40486	12	22	47.50	+00	41	44.6		4	675
2563	1971	03	26.31007	12	21	23.94	+00	51	18.4	16.7	4	675
2563	1971	03	26.34896	12	21	22.15	+00	51	29.9		4	675
2563	1971	03	27.35208	12	20	38.04	+00	56	31.7		4	675
2563	1971	04	02.41285	12	16	14.46	+01	25	49.1		4	675
2580	1990	08	24.43177	00	01	47.20	-02	30	17.5		9	675
2580	1990	08	24.46788	00	01	46.37	-02	30	26.8		9	675
2580	1990	08	29.46160	23	59	46.75	-02	53	47.6		9	675
2580	1990	08	29.49927	23	59	45.70	-02	53	57.7		9	675
2584	1990	08	24.45052	00	42	43.61	+02	24	19.9		9	675
2584	1990	08	24.48646	00	42	42.84	+02	24	15.0		9	675
2619	1990	08	22.40318	23	38	26.19	-01	14	24.1		9	675
2619	1990	08	22.44363	23	38	24.68	-01	14	33.3		9	675
2619	1990	08	28.40590	23	34	45.00	-01	38	58.8		9	675
2619	1990	08	28.43906	23	34	43.75	-01	39	06.3		9	675
2656	1990	08	25.35955	23	21	30.17	-09	28	06.4	17.2	9	675
2656	1990	08	25.39792	23	21	28.12	-09	28	21.7		9	675
2657	1990	08	22.39288	22	33	39.34	-12	33	47.6		9	675
2657	1990	08	22.43351	22	33	37.46	-12	33	58.5		9	675
2657	1990	08	27.36354	22	29	56.44	-12	55	15.5	17.2	9	675
2657	1990	08	27.39615	22	29	54.92	-12	55	24.0		9	675
2700	1990	08	24.45052	00	51	58.29	+04	59	56.6		9	675
2700	1990	08	24.48646	00	51	57.75	+04	59	51.5		9	675
2750	1971	03	24.40486	12	41	01.49	+02	21	59.9		4	675
2750	1971	03	26.31007	12	39	03.13	+02	29	58.2	17.0	4	675
2750	1971	03	26.34896	12	39	00.62	+02	30	07.8		4	675
2750	1971	03	27.35208	12	37	57.79	+02	34	10.0		4	675
2750	1971	04	02.43993	12	31	34.87	+02	57	05.1		4	675
2753	1971	03	24.38924	11	54	06.08	-02	38	15.7		4	675
2753	1971	03	25.27326	11	53	19.31	-02	35	21.1		4	675
2753	1971	03	25.31562	11	53	16.98	-02	35	12.9	16.5	4	675
2796	1990	08	22.39288	22	53	05.75	-06	40	18.7		9	675
2796	1990	08	22.43351	22	53	03.92	-06	40	41.8		9	675
2796	1990	08	23.43941	22	52	20.20	-06	50	08.6		9	675
2796	1990	08	23.47517	22	52	18.57	-06	50	29.5		9	675
2796	1990	08	29.40694	22	47	51.60	-07	47	12.1		9	675
2803	1990	08	24.45052	00	51	40.06	+04	48	36.0		9	675
2803	1990	08	24.48646	00	51	39.57	+04	48	33.5		9	675
2886	1990	08	24.45052	00	47	08.49	+02	56	59.0	17.2	9	675
2886	1990	08	24.48646	00	47	08.03	+02	56	53.9		9	675
2923	1990	08	22.39288	22	55	35.24	-07	57	08.5	17.5	9	675
2923	1990	08	22.43351	22	55	33.03	-07	57	19.3		9	675
2923	1990	08	23.43941	22	54	40.67	-08	01	47.2		9	675
2923	1990	08	23.47517	22	54	38.75	-08	01	57.4		9	675
2923	1990	08	29.40694	22	49	19.35	-08	28	58.6		9	675
2923	1990	08	29.44375	22	49	17.28	-08	29	08.6		9	675
2954	1990	08	24.43177	23	52	49.94	-01	10	34.5	17.8	9	675
2954	1990	08	24.46788	23	52	48.29	-01	10	48.2		9	675
2954	1990	08	29.46160	23	49	03.50	-01	43	39.1		9	675
2954	1990	08	29.49927	23	49	01.88	-01	43	52.7		9	675
2973	1971	03	24.42015	12	39	24.52	-05	38	10.2		4	675
2973	1971	03	25.33090	12	38	34.35	-05	33	22.5		4	675
2973	1971	03	26.29653	12	37	40.83	-05	28	17.5	17.3	4	675

2973		1971	03	26.33611	12	37	38.59	-05	28	05.0		4 675
2973		1971	03	27.33854	12	36	42.94	-05	22	45.3		4 675
2973		1971	04	02.42604	12	31	04.16	-04	49	51.9		4 675
2990		1990	08	22.39288	22	34	11.95	-07	35	21.4		9 675
2990		1990	08	22.43351	22	34	09.82	-07	35	36.0		9 675
2990		1990	08	29.40694	22	28	01.88	-08	18	20.1		9 675
2990		1990	08	29.44375	22	27	59.82	-08	18	33.6		9 675
2995		1990	08	16.23420	20	13	48.98	-05	30	33.7	16.7	2 675
2995		1990	08	16.25833	20	13	48.03	-05	30	44.4		2 675
2998		1990	08	24.45052	00	42	06.50	+03	01	17.4		9 675
2998		1990	08	24.48646	00	42	06.35	+03	01	10.3		9 675
3005		1990	08	22.39288	22	49	40.11	-05	46	26.3	16.8	9 675
3005		1990	08	22.43351	22	49	37.89	-05	46	42.0		9 675
3005		1990	08	29.40694	22	43	20.48	-06	34	06.0		9 675
3005		1990	08	29.44375	22	43	18.36	-06	34	21.9		9 675
3029		1971	04	02.40000	12	07	56.78	-06	50	31.1		4 675
3043		1990	08	29.46160	00	08	33.68	-03	05	49.6		9 675
3047		1990	08	22.40318	23	38	19.97	-01	04	25.1		9 675
3047		1990	08	22.44363	23	38	18.44	-01	04	35.0		9 675
3047		1990	08	28.40590	23	34	15.76	-01	25	41.9		9 675
3047		1990	08	28.43906	23	34	14.25	-01	25	49.9		9 675
3096		1971	03	24.40486	12	25	34.82	+02	33	46.8		4 675
3096		1971	03	26.31007	12	24	06.37	+02	49	49.9	17.5	4 675
3096		1971	03	26.34896	12	24	04.53	+02	50	10.1		4 675
3096		1971	03	27.35208	12	23	17.50	+02	58	32.4		4 675
3096		1971	04	02.41285	12	18	35.34	+03	48	09.1		4 675
3096		1971	04	02.43993	12	18	33.63	+03	48	25.4		4 675
3141		1990	08	22.39288	22	36	21.23	-04	43	05.0	16.5	9 675
3141		1990	08	22.43351	22	36	19.47	-04	43	08.9		9 675
3141		1990	08	29.40694	22	31	08.14	-04	56	06.6		9 675
3141		1990	08	29.44375	22	31	06.50	-04	56	09.5		9 675
3256		1990	08	22.40318	23	23	25.82	-01	26	57.2		9 675
3256		1990	08	22.44363	23	23	24.28	-01	27	12.8		9 675
3256		1990	08	28.40590	23	19	37.60	-02	06	07.1		9 675
3256		1990	08	28.43906	23	19	36.21	-02	06	19.4		9 675
3283		1990	08	23.43941	23	11	31.74	-09	34	29.5		9 675
3283		1990	08	23.47517	23	11	29.75	-09	34	34.3		9 675
3283		1990	08	25.35955	23	09	47.99	-09	37	53.5		9 675
3283		1990	08	25.39792	23	09	45.74	-09	37	57.1		9 675
3283		1990	08	27.37031	23	07	55.22	-09	41	33.6		9 675
3283		1990	08	27.40330	23	07	53.23	-09	41	35.1		9 675
3311		1990	08	24.43177	00	11	26.03	+00	50	56.0		9 675
3311		1990	08	24.46788	00	11	24.94	+00	50	46.9		9 675
3311		1990	08	29.46160	00	08	43.83	+00	31	29.6		9 675
3311		1990	08	29.49927	00	08	42.63	+00	31	22.3		9 675
3329		1990	08	25.35955	23	33	57.93	-10	43	06.6	16.5	9 675
3329		1990	08	25.39792	23	33	56.18	-10	43	12.6		9 675
3366		1990	08	24.43177	23	49	30.42	+02	07	03.4		9 675
3366		1990	08	24.46788	23	49	29.34	+02	06	50.5		9 675
3366		1990	08	29.46160	23	46	55.25	+01	34	14.8		9 675
3366		1990	08	29.49927	23	46	54.11	+01	34	01.0		9 675
3538		1990	08	22.40318	23	44	14.47	-01	02	47.3		9 675
3538		1990	08	22.44363	23	44	13.19	-01	02	59.8		9 675
3538		1990	08	24.43177	23	43	11.86	-01	13	18.1		9 675
3538		1990	08	24.46788	23	43	10.65	-01	13	29.7		9 675
3538		1990	08	28.40590	23	40	53.98	-01	35	58.2		9 675
3538		1990	08	28.43906	23	40	52.63	-01	36	09.6		9 675
3538		1990	08	29.46160	23	40	13.91	-01	42	20.9		9 675
3538		1990	08	29.49927	23	40	12.61	-01	42	32.4		9 675

3580	1990	08	24.43177	00	03	37.78	+00	50	23.6		9 675
3580	1990	08	24.46788	00	03	36.54	+00	50	18.7		9 675
3580	1990	08	29.46160	00	00	37.09	+00	34	38.0		9 675
3580	1990	08	29.49927	00	00	36.03	+00	34	32.1		9 675
3589	1971	03	24.40486	12	31	33.50	+04	14	58.8		4 675
3589	1971	03	26.31007	12	29	42.39	+04	28	10.4	18.9	4 675
3589	1971	03	26.34896	12	29	39.92	+04	28	26.6		4 675
3600	1990	08	22.40318	23	38	14.63	-06	57	24.8		9 675
3600	1990	08	22.44363	23	38	12.89	-06	57	31.7		9 675
3600	1990	08	25.35955	23	36	00.61	-07	07	01.4		9 675
3600	1990	08	25.39792	23	35	58.72	-07	07	08.1		9 675
3600	1990	08	28.40590	23	33	33.73	-07	17	19.6		9 675
3618	1990	08	29.40694	22	43	41.28	-04	37	31.1		9 675
3618	1990	08	29.44375	22	43	39.66	-04	37	40.6		9 675
3773	1990	08	22.40318	23	26	07.01	-06	52	53.8		9 675
3773	1990	08	22.44363	23	26	05.51	-06	53	03.0		9 675
3773	1990	08	25.35955	23	24	21.54	-07	05	53.3		9 675
3773	1990	08	25.39792	23	24	19.91	-07	06	03.1		9 675
3773	1990	08	27.37031	23	23	01.80	-07	15	16.7		9 675
3773	1990	08	27.40330	23	23	00.30	-07	15	24.2		9 675
3773	1990	08	28.40590	23	22	18.60	-07	20	10.3		9 675
3773	1990	08	28.43906	23	22	17.07	-07	20	20.0		9 675
3780	1990	08	24.45052	00	57	10.17	+03	35	41.9		9 675
3780	1990	08	24.48646	00	57	09.67	+03	35	35.7		9 675
3799	1990	08	24.45052	00	57	17.08	+05	16	02.4		9 675
3799	1990	08	24.48646	00	57	16.41	+05	15	56.9		9 675
3809	1990	08	27.36354	22	33	00.70	-14	42	49.0		9 675
3809	1990	08	27.39615	22	32	59.12	-14	43	02.6		9 675
3811	1990	08	22.40318	23	39	16.99	-00	24	16.6	16.2	9 675
3811	1990	08	22.44363	23	39	15.16	-00	24	14.6		9 675
3811	1990	08	28.40590	23	34	33.69	-00	20	10.4		9 675
3811	1990	08	28.43906	23	34	31.93	-00	20	09.6		9 675
3818	1990	08	24.45052	00	35	38.44	+07	32	24.5	17.5	9 675
3818	1990	08	24.48646	00	35	37.68	+07	32	22.2		9 675
3835	1990	08	24.45052	00	41	34.18	+04	26	20.9		9 675
3835	1990	08	24.48646	00	41	33.83	+04	26	06.2		9 675
3842	1990	08	23.43941	23	06	17.90	-06	33	35.9		9 675
3842	1990	08	23.47517	23	06	15.97	-06	33	44.6		9 675
3842	1990	08	27.37031	23	02	45.00	-06	48	37.2		9 675
3842	1990	08	27.40330	23	02	43.06	-06	48	42.9		9 675
3844	1971	03	24.37118	12	12	57.41	+02	56	21.1		4 675
3844	1971	03	25.24340	12	12	15.67	+03	01	39.4	17.2	4 675
3844	1971	03	25.28715	12	12	13.47	+03	01	54.1		4 675
3844	1971	03	26.25208	12	11	27.05	+03	07	41.4		4 675
3844	1971	03	27.31181	12	10	36.07	+03	13	59.8		4 675
3844	1971	04	02.41285	12	05	47.40	+03	48	49.7		4 675
3852	1971	03	24.42015	12	21	51.48	-04	06	07.4		4 675
3852	1971	03	25.33090	12	21	12.47	-04	01	53.2		4 675
3852	1971	03	26.29653	12	20	30.88	-03	57	22.4	18.2	4 675
3852	1971	03	26.33611	12	20	29.17	-03	57	12.2		4 675
3852	1971	03	27.33854	12	19	45.96	-03	52	27.1		4 675
3852	1971	04	02.40000	12	15	26.91	-03	23	54.3		4 675
3859	1990	08	24.45052	01	03	33.60	+03	18	31.2		9 675
3859	1990	08	24.48646	01	03	33.09	+03	18	26.6		9 675
3886	1990	08	27.40330	23	05	59.81	-02	09	00.7		9 675
3946	1990	08	22.39288	22	35	57.24	-08	39	36.3		9 675
3946	1990	08	22.43351	22	35	55.42	-08	39	46.7		9 675
3946	1990	08	29.40694	22	30	35.59	-09	09	36.0		9 675
3946	1990	08	29.44375	22	30	33.82	-09	09	45.2		9 675

4047	1971	03	24.37118	12	13	25.29	+00	54	52.5		4	675
4047	1971	03	25.24340	12	12	40.08	+00	59	13.5	18.5	4	675
4047	1971	03	25.28715	12	12	37.75	+00	59	26.3		4	675
4047	1971	03	26.25208	12	11	47.60	+01	04	09.6		4	675
4047	1971	04	02.41285	12	05	38.57	+01	38	23.8		4	675
4072	1990	08	22.40318	23	29	32.01	-05	55	06.0		9	675
4072	1990	08	22.44363	23	29	29.88	-05	55	17.0		9	675
4072	1990	08	25.35955	23	27	03.43	-06	09	42.2		9	675
4072	1990	08	25.39792	23	27	01.41	-06	09	53.4		9	675
4072	1990	08	27.37031	23	25	16.28	-06	20	04.1		9	675
4072	1990	08	27.40330	23	25	14.35	-06	20	13.3		9	675
4072	1990	08	28.40590	23	24	19.37	-06	25	29.0		9	675
4072	1990	08	28.43906	23	24	17.42	-06	25	40.1		9	675
4087	1990	08	25.35955	23	13	39.35	-12	14	12.5	16.2	9	675
4087	1990	08	25.39792	23	13	37.14	-12	14	20.7		9	675
4096	1971	03	24.40486	12	35	56.42	-00	45	51.4		4	675
4096	1971	03	26.31007	12	34	17.29	-00	39	50.4	18.4	4	675
4096	1971	03	26.34896	12	34	15.19	-00	39	42.9		4	675
4096	1971	03	27.35208	12	33	22.70	-00	36	33.0		4	675
4096	1971	04	02.43993	12	28	00.76	-00	17	35.9		4	675
4099	1990	08	27.36354	22	27	23.70	-17	51	30.3		9	675
4099	1990	08	27.39615	22	27	22.11	-17	51	49.6	17.0	9	675
4101	1990	08	22.40318	23	35	45.73	-01	17	01.3		9	675
4101	1990	08	22.44363	23	35	43.88	-01	17	01.0		9	675
4101	1990	08	28.40590	23	31	03.50	-01	18	34.3		9	675
4101	1990	08	28.43906	23	31	01.75	-01	18	35.4		9	675
4110	1990	08	24.43177	23	58	30.93	+01	08	53.8		9	675
4110	1990	08	24.46788	23	58	29.71	+01	08	45.9		9	675
4110	1990	08	29.46160	23	55	40.96	+00	48	31.0		9	675
4110	1990	08	29.49927	23	55	39.75	+00	48	23.0		9	675
4117	1971	03	24.40486	12	25	29.00	+02	58	06.4		4	675
4117	1971	03	26.31007	12	24	05.00	+03	14	47.7	17.6	4	675
4117	1971	03	26.34896	12	24	03.25	+03	15	07.9		4	675
4117	1971	03	27.35208	12	23	18.54	+03	23	50.4		4	675
4117	1971	04	02.41285	12	18	49.76	+04	15	30.1		4	675
4117	1971	04	02.43993	12	18	48.24	+04	15	47.4		4	675
4148	1990	08	22.40318	23	23	54.79	-01	11	31.4	17.2	9	675
4148	1990	08	22.44363	23	23	52.62	-01	11	38.5		9	675
4148	1990	08	28.40590	23	18	29.79	-01	29	46.1		9	675
4148	1990	08	28.43906	23	18	27.84	-01	29	53.2		9	675
4167	1990	08	23.43941	23	07	31.34	-05	09	39.0		9	675
4167	1990	08	23.47517	23	07	29.88	-05	10	04.1		9	675
4167	1990	08	27.37031	23	04	51.27	-05	54	57.6		9	675
4167	1990	08	27.40330	23	04	49.82	-05	55	18.8		9	675
4172	1990	08	24.43177	23	51	13.78	+00	03	04.3	18.5	9	675
4172	1990	08	24.46788	23	51	12.23	+00	02	56.2		9	675
4172	1990	08	29.46160	23	47	22.71	-00	16	11.1		9	675
4172	1990	08	29.49927	23	47	20.97	-00	16	20.3		9	675
4176	1971	03	24.40486	12	43	16.85	-00	37	37.7		4	675
4176	1971	03	26.31007	12	41	52.18	-00	27	48.6	17.2	4	675
4176	1971	03	26.34896	12	41	50.39	-00	27	36.4		4	675
4176	1971	03	27.35208	12	41	05.64	-00	22	30.0		4	675
4176	1971	04	02.43993	12	36	31.03	+00	08	08.3		4	675
4176	1990	08	29.46160	00	12	20.03	-02	06	19.6		9	675
4176	1990	08	29.49927	00	12	19.02	-02	06	27.9		9	675
4221	1971	03	24.42015	12	34	55.00	-04	20	40.0		4	675
4221	1971	03	25.33090	12	34	17.82	-04	08	01.0		4	675
4221	1971	03	26.29653	12	33	38.03	-03	54	33.3	16.3	4	675
4221	1971	03	26.33611	12	33	36.18	-03	54	00.4		4	675

4221	1971	03	27.33854	12	32	54.42	-03	39	56.2		4 675
4221	1971	04	02.42604	12	28	38.00	-02	13	52.0		4 675
4240	1971	03	24.38924	12	01	22.03	-01	18	37.4		4 675
4240	1971	03	25.27326	12	00	40.93	-01	14	20.4		4 675
4240	1971	03	25.31562	12	00	38.91	-01	14	09.0	19.2	4 675
4240	1971	03	26.26771	11	59	54.77	-01	09	33.6		4 675
4240	1971	03	27.31181	11	59	06.15	-01	04	31.8		4 675
4240	1971	03	27.32500	11	59	05.72	-01	04	28.2		4 675
4326	1971	03	24.37118	12	20	01.53	+04	43	02.2		4 675
4326	1971	03	25.24340	12	19	21.33	+04	48	03.0	17.0	4 675
4326	1971	03	25.28715	12	19	19.18	+04	48	17.8		4 675
4326	1971	03	26.25208	12	18	34.26	+04	53	47.3		4 675
4326	1971	03	27.31181	12	17	44.54	+04	59	45.5		4 675
4394	1971	03	24.42015	12	31	13.97	-02	26	53.8		4 675
4394	1971	03	25.33090	12	30	20.99	-02	20	25.7		4 675
4394	1971	03	26.29653	12	29	24.15	-02	13	29.6	19.3	4 675
4394	1971	03	26.33611	12	29	21.77	-02	13	12.7		4 675
4394	1971	03	27.33854	12	28	22.32	-02	06	00.0		4 675
4422	1971	03	26.31007	12	42	28.50	+00	35	48.5	17.4	4 675
4422	1971	03	26.34896	12	42	26.31	+00	36	06.7		4 675
4422	1971	03	27.35208	12	41	30.10	+00	43	47.6		4 675
4422	1971	04	02.43993	12	35	44.69	+01	29	44.5		4 675
4465	1971	03	24.40486	12	22	37.54	+02	12	59.5		4 675
4465	1971	03	26.31007	12	20	49.19	+02	22	09.5	17.2	4 675
4465	1971	03	26.34896	12	20	46.86	+02	22	21.0		4 675
4465	1971	03	27.31181	12	19	52.44	+02	26	49.1		4 675
4465	1971	03	27.35208	12	19	49.68	+02	27	02.5		4 675
4465	1971	04	02.41285	12	14	10.60	+02	53	45.0		4 675
4517	1971	03	24.40486	12	39	40.92	-00	53	57.4		4 675
4517	1971	03	26.31007	12	37	40.70	-00	44	10.9	17.8	4 675
4517	1971	03	26.34896	12	37	38.10	-00	44	00.1		4 675
4517	1971	03	27.35208	12	36	34.01	-00	38	50.4		4 675
4517	1971	04	02.43993	12	29	57.81	-00	07	47.3		4 675
4550	1971	03	24.38924	12	12	28.61	-01	15	41.8		4 675
4550	1971	03	25.27326	12	11	49.64	-01	11	31.3		4 675
4550	1971	03	25.31562	12	11	47.71	-01	11	17.9	18.8	4 675
4550	1971	03	26.26771	12	11	05.81	-01	06	48.2		4 675
4550	1971	03	27.31181	12	10	19.54	-01	01	54.2		4 675
4550	1971	03	27.32500	12	10	19.02	-01	01	48.3		4 675
4550	1971	04	02.41285	12	05	52.46	-00	33	21.1		4 675
4560	1990	07	25.26754	19	51	53.80	-17	47	31.8	17.0	9 675
4560	1990	07	25.30590	19	51	51.72	-17	47	30.4		9 675
4560	1990	07	27.29514	19	50	07.05	-17	46	40.0	17.0	9 675
4560	1990	07	27.32674	19	50	05.32	-17	46	39.5		9 675
4574	1990	07	27.29514	19	42	25.48	-17	18	09.1	17.2	9 675
4574	1990	07	27.32674	19	42	23.68	-17	18	10.7		9 675
4580	1990	08	19.27083	21	03	29.89	-05	34	33.2	15.7	2 675
4580	1990	08	19.29931	21	03	28.53	-05	34	46.0		2 675
4580	1990	08	21.26788	21	01	59.58	-05	51	28.8		2 675
4580	1990	08	21.29583	21	01	58.28	-05	51	45.1		2 675

688 Lowell Observatory, Anderson Mesa Station
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road,
Flagstaff, AZ 86001, U.S.A.
Observers B. A. Skiff, C. M. Olmstead
Measurer B. A. Skiff
1.8-m reflector + CCD

1982 TX	1990	08	28.22858	20	01	07.11	+06	51	59.6	18.0R	688
1982 TX	1990	08	28.23993	20	01	06.60	+06	51	53.9		688

1988	VP4		1990	08	27.21704	20	17	35.27	-11	47	53.7	21.9R F 688
1988	VP4		1990	08	27.22524	20	17	34.92	-11	47	54.8	F 688
1988	WC		1990	08	27.19188	18	54	57.58	+03	20	22.2	20.0R 688
1988	WC		1990	08	27.19925	18	54	57.42	+03	20	20.0	688
1990	MB		1990	08	27.12675	17	07	03.95	+06	34	16.2	17.8R 688
1990	MB		1990	08	27.14417	17	07	05.50	+06	34	11.8	688
1990	MF		1990	08	28.42966	05	10	48.70	+28	07	03.4	19.5R 688
1990	MF		1990	08	28.43325	05	10	48.97	+28	07	00.4	688
2135			1990	08	27.25034	21	30	24.82	+14	25	53.2	20.6R 688
2135			1990	08	27.25791	21	30	24.16	+14	25	46.5	688
3270			1990	08	28.35484	00	24	37.23	-17	21	45.3	17.5R 688
3270			1990	08	28.36072	00	24	37.06	-17	21	52.9	688
3343			1990	08	28.41417	03	38	35.73	+13	05	58.3	18.0R 688
3343			1990	08	28.41846	03	38	35.82	+13	05	59.8	688
3352			1990	08	27.31593	23	43	27.60	-09	32	02.6	18.3R 688
3352			1990	08	27.32113	23	43	27.32	-09	32	05.6	688
3553			1990	08	28.33372	01	25	05.84	+49	15	06.6	19.0R 688
3553			1990	08	28.34470	01	25	05.70	+49	15	10.7	688
3635			1990	08	27.17233	18	51	42.61	+08	45	52.6	17.3R 688
3635			1990	08	27.18536	18	51	42.53	+08	45	45.0	688
3988			1990	08	29.40553	04	55	00.56	+29	33	49.2	19.5R b 688
3988			1990	08	29.41133	04	55	01.32	+29	33	48.3	b 688

691 Kitt Peak, Steward Observatory
T. Gehrels, Space Sciences Building, University of Arizona,
Tucson, AZ 85721, U.S.A.
Observers T. Gehrels, J. V. Scotti, D. Rabinowitz
0.91-m SPACEWATCH telescope
SAOC 1984
See also MPC 9198, MPC 10373 and Astron. J. 91, 1242, 1986

1990	SN	*	1990	09	17.45938	00	53	04.84	+05	54	40.8	17.8V 691
1990	SN		1990	09	17.48223	00	53	04.05	+05	54	52.9	691
1990	SN		1990	09	17.50381	00	53	03.37	+05	55	05.9	691
1990	SN		1990	09	19.36000	00	52	07.17	+06	12	33.0	17.9V 691
1990	SN		1990	09	19.37367	00	52	06.65	+06	12	40.6	691
1990	SN		1990	09	19.39632	00	52	05.78	+06	12	53.3	691
1990	SN		1990	09	21.31506	00	51	00.16	+06	30	31.4	691
1990	SN		1990	09	21.33238	00	50	59.42	+06	30	40.9	691
1990	SN		1990	09	21.34640	00	50	58.87	+06	30	46.2	691
1990	SO	*	1990	09	21.25556	23	36	31.11	+05	06	05.0	19.8V 691
1990	SO		1990	09	21.27862	23	36	27.03	+05	06	54.8	691
1990	SO		1990	09	21.30164	23	36	22.95	+05	07	44.1	691
1990	SO		1990	09	22.31862	23	33	31.32	+05	43	49.5	19.7V 691
1990	SO		1990	09	22.33442	23	33	28.52	+05	44	24.2	691
1990	SO		1990	09	22.34005	23	33	27.63	+05	44	35.1	691
1990	SO		1990	09	23.34778	23	30	39.39	+06	19	48.3	19.3V 691
1990	SO		1990	09	23.35877	23	30	37.53	+06	20	11.1	691
1990	SO		1990	09	23.36404	23	30	36.62	+06	20	21.6	691

760 Goethe Link
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road,
Flagstaff, AZ 86001, U.S.A.
Observers D. M. Bubeck, J. E. Michlovic
Measurer B. A. Skiff
0.25-m refractor
PDS scanning microdensitometer
AGK3 and Perth 70 secondary nets, global solutions

1950	TV2		1950	10	13.20616	00	31	05.65	+09	52	31.8	760
1950	TX2		1950	10	13.20616	00	23	36.98	+08	53	40.1	760

1950	TY2	1950	10	13.20616	00	18	19.28	+08	48	14.3		760
1950	TA3	1950	10	13.20616	00	25	33.22	+08	26	37.4		760
1962	VG	1962	11	01.14786	00	52	04.63	+08	57	07.9		760
1962	VK	1962	11	01.14786	01	07	02.88	+06	21	21.6	A	760
32		1962	11	01.14786	00	53	13.53	+08	20	49.1	12.4	760
124		1962	11	01.14786	00	56	06.86	+04	45	14.0	12.7	760
526		1962	11	01.14786	01	12	26.34	+04	38	10.6	15.6	760
575		1950	10	13.20616	00	22	03.51	+14	38	52.2	13.6	760
586		1962	11	01.14786	00	54	58.40	+07	01	02.3	14.2	760
656		1962	11	01.14786	00	54	22.66	+05	35	30.7	15.7	760
826		1962	11	01.14786	00	58	45.65	+11	16	12.0		760
1146		1962	11	01.14786	00	55	16.30	+11	08	27.9	14.7	760
1207		1962	11	01.14786	01	04	18.38	+06	44	59.8	15.7	760
1430		1962	11	01.14786	00	54	23.18	+11	04	55.4		760
1877		1950	10	13.20616	00	21	59.39	+11	25	28.3		760
2657		1962	11	01.14786	00	57	05.59	+04	20	57.2		760
3107		1962	11	01.14786	01	12	16.37	+10	41	49.3		760

801 Oak Ridge
R. E. McCrosky, Harvard-Smithsonian Center for Astrophysics,
60 Garden Street, Cambridge, MA 02138, U.S.A.
Observers R. E. McCrosky, C.-Y. Shao
1.5-m reflector + CCD

A923	RH	1990	08	16.31050	00	04	13.50	-08	53	58.6		801
A923	RH	1990	08	16.33906	00	04	12.51	-08	53	53.9		801
A923	RH	1990	08	20.30990	00	01	47.67	-08	43	43.5		801
A923	RH	1990	08	20.33155	00	01	46.64	-08	43	40.5		801
1927	TC	1990	08	16.29051	23	25	06.53	-08	33	47.2		801
1927	TC	1990	08	16.30263	23	25	06.68	-08	33	24.6		801
1927	TC	1990	08	17.27216	23	25	25.41	-08	03	12.4		801
1927	TC	1990	08	17.27525	23	25	25.44	-08	03	06.5		801
1933	OB	1990	08	16.24254	22	21	21.58	-06	29	34.4		801
1933	OB	1990	08	16.26244	22	21	20.66	-06	29	40.1		801
1933	OB	1990	08	17.21837	22	20	38.43	-06	34	24.8		801
1933	OB	1990	08	17.24090	22	20	37.35	-06	34	31.5		801
1936	QE1	1990	07	20.30885	21	35	29.20	-00	28	05.2		801
1936	QE1	1990	08	17.18417	21	16	55.61	-04	27	41.7		801
1936	QE1	1990	08	17.20204	21	16	54.76	-04	27	53.9		801
1936	QE1	1990	08	19.09491	21	15	29.66	-04	49	45.9		801
1936	QE1	1990	08	19.12663	21	15	28.17	-04	50	08.4		801
1949	QQ1	1990	07	22.19587	20	01	06.52	-23	13	57.9		801
1949	QQ1	1990	07	22.21907	20	01	05.22	-23	13	58.1		801
1949	QQ1	1990	08	16.11597	19	40	29.89	-22	59	19.4		801
1949	QQ1	1990	08	16.15411	19	40	28.36	-22	59	16.1		801
1949	QQ1	1990	08	17.08050	19	39	52.86	-22	58	05.2		801
1949	QQ1	1990	08	17.11144	19	39	51.66	-22	58	02.7		801
1950	TF	1990	08	19.18673	22	35	57.20	-04	30	33.2		801
1950	TF	1990	08	19.21604	22	35	55.49	-04	30	36.3		801
1968	OG1	1990	08	17.17210	21	05	27.66	-06	04	03.3		801
1968	OG1	1990	08	17.18915	21	05	26.72	-06	04	13.5		801
1968	OG1	1990	08	20.15487	21	02	59.53	-06	34	16.5		801
1974	SB5	1990	08	17.12946	20	29	13.68	-22	04	26.7		801
1974	SB5	1990	08	17.15449	20	29	12.56	-22	04	29.7		801
1974	SB5	1990	08	22.09526	20	25	56.10	-22	13	48.1		801
1974	SB5	1990	08	22.12292	20	25	55.01	-22	13	50.9		801
1975	VZ	1990	08	22.13610	21	19	38.69	-15	43	11.2		801
1975	VZ	1990	08	22.15542	21	19	37.68	-15	43	18.2		801
1976	DK	1989	06	30.14491	16	52	15.33	-10	27	28.7		801
1976	DK	1990	08	19.09956	21	24	52.56	+12	25	51.6		801

1976	DK	1990	08	19.13514	21	24	50.99	+12	25	43.5	801
1976	DK	1990	08	20.13704	21	24	08.37	+12	21	50.9	801
1976	DK	1990	08	20.15972	21	24	07.33	+12	21	46.4	801
1977	DS2	1990	07	20.13771	17	56	44.14	-07	36	43.9	801
1977	RJ3	1990	08	20.36473	02	21	30.58	+21	55	04.4	801
1977	RJ3	1990	08	20.37405	02	21	31.09	+21	55	11.9	801
1979	QE10	1990	08	16.31425	00	11	10.19	+04	03	37.2	801
1979	QE10	1990	08	16.34341	00	11	09.79	+04	03	33.1	801
1979	SQ11	1987	02	28.25489	09	27	45.27	+15	35	32.7	801
1979	SQ11	1990	08	16.28425	23	22	54.63	-04	44	42.8	801
1979	SQ11	1990	08	17.26913	23	22	25.54	-04	47	57.5	801
1979	SQ11	1990	08	17.34776	23	22	23.05	-04	48	13.2	801
1980	KR1	1990	07	19.28033	21	10	18.17	-11	02	30.4	801
1980	KR1	1990	08	17.13806	20	44	02.41	-14	19	09.2	801
1980	KR1	1990	08	17.16063	20	44	01.25	-14	19	18.7	801
1980	KR1	1990	08	22.09858	20	40	13.18	-14	52	39.7	801
1980	KR1	1990	08	22.11951	20	40	12.23	-14	52	47.8	801
1980	RJ	1990	08	16.28773	23	25	09.63	-07	48	39.6	801
1980	RJ	1990	08	16.32167	23	25	08.19	-07	48	41.4	801
1980	RJ	1990	08	17.24887	23	24	30.54	-07	49	33.4	801
1980	RJ	1990	08	17.26574	23	24	29.79	-07	49	34.5	801
1980	RJ	1990	08	18.20976	23	23	49.73	-07	50	33.3	801
1980	RJ	1990	08	18.22093	23	23	49.22	-07	50	34.0	801
1980	RJ	1990	08	19.24740	23	23	03.65	-07	51	43.6	801
1980	RJ	1990	08	19.27754	23	23	02.20	-07	51	45.6	801
1980	RJ	1990	08	20.28093	23	22	15.91	-07	53	02.0	801
1980	RJ	1990	08	20.29788	23	22	15.09	-07	53	03.5	801
1980	XZ	1990	08	16.30656	00	09	24.85	-17	28	06.8	801
1980	XZ	1990	08	16.33457	00	09	24.19	-17	28	17.6	801
1980	XZ	1990	08	20.31826	00	07	45.39	-17	53	53.9	801
1980	XZ	1990	08	20.34125	00	07	44.74	-17	54	02.2	801
1981	EZ2	1990	08	22.08631	20	15	37.41	-05	52	47.6	801
1981	EZ2	1990	08	22.10776	20	15	36.65	-05	52	54.2	801
1981	VS	1990	08	17.25939	22	58	22.81	+05	37	56.6	801
1981	VS	1990	08	17.28960	22	58	21.73	+05	37	50.7	801
1981	VS	1990	08	20.27477	22	56	39.06	+05	26	09.8	801
1981	VS	1990	08	20.29385	22	56	38.32	+05	26	04.9	801
1982	UU5	1990	08	16.29355	23	30	05.73	+03	45	27.1	801
1982	UU5	1990	08	16.33089	23	30	04.40	+03	45	25.3	801
1982	UU5	1990	08	17.27856	23	29	32.24	+03	44	10.9	801
1982	UU5	1990	08	17.35226	23	29	29.63	+03	44	04.2	801
1982	UG6	1990	08	16.25940	22	41	17.27	-11	07	58.3	801
1982	UG6	1990	08	16.28004	22	41	16.26	-11	08	04.4	801
1983	HB1	1990	08	16.25593	22	35	54.66	-22	12	31.6	801
1983	HB1	1990	08	20.26537	22	33	13.05	-22	47	32.4	801
1983	HB1	1990	08	20.28489	22	33	12.20	-22	47	42.3	801
1983	OD	1990	07	19.11832	17	14	41.89	-08	40	25.9	801
1983	OD	1990	07	20.08561	17	14	11.07	-08	50	25.2	801
1984	DA	1990	08	16.08374	19	09	21.32	+01	54	03.8	801
1984	DA	1990	08	16.09576	19	09	21.03	+01	53	50.7	801
1984	HL	1989	06	30.12256	15	44	22.42	-10	54	22.8	801
1984	HL	1990	08	20.21656	21	58	18.70	-10	39	36.1	801
1984	HL	1990	08	20.24087	21	58	17.42	-10	39	44.8	801
1984	YU1	1990	08	20.22081	22	10	12.86	-15	21	24.5	801
1984	YU1	1990	08	20.25254	22	10	10.84	-15	21	33.6	801
1985	DY1	1990	07	22.21569	19	58	41.48	-21	54	17.0	801
1985	PG1	1990	08	17.23283	22	28	18.60	+00	35	40.2	801
1985	PG1	1990	08	17.25259	22	28	17.80	+00	35	33.3	801
1985	PG1	1990	08	18.18247	22	27	41.37	+00	30	09.8	801

1985	PG1	1990	08	18.19330	22	27	40.92	+00	30	06.1	801
1985	RT2	1990	08	16.24849	22	29	05.43	-13	28	06.8	801
1985	RT2	1990	08	16.26565	22	29	04.65	-13	28	12.5	801
1985	RT2	1990	08	17.25611	22	28	21.10	-13	33	38.4	801
1985	RE4	1990	08	16.19874	21	15	27.29	-16	01	25.4	801
1985	RE4	1990	08	16.21627	21	15	26.46	-16	01	33.2	801
1985	RE4	1990	08	17.17943	21	14	44.35	-16	09	00.1	801
1985	RE4	1990	08	17.19770	21	14	43.52	-16	09	08.6	801
1985	TZ1	1990	08	16.31868	00	12	18.02	+12	22	40.9	801
1985	TZ1	1990	08	16.34692	00	12	17.66	+12	22	42.2	801
1986	RU4	1990	08	17.28481	23	56	21.53	+16	57	43.7	801
1986	RU4	1990	08	17.35575	23	56	19.37	+16	57	52.0	801
1986	RU4	1990	08	19.26057	23	55	21.45	+17	01	17.4	801
1986	RU4	1990	08	19.29366	23	55	20.34	+17	01	20.6	801
1986	UD3	1990	07	19.25090	20	52	07.97	+01	57	33.5	801
1986	UD3	1990	07	19.27333	20	52	06.87	+01	57	35.8	801
1986	UD3	1990	08	17.12519	20	27	08.78	+01	19	28.3	801
1986	UD3	1990	08	17.14806	20	27	07.63	+01	19	22.8	801
1986	UD3	1990	08	18.24480	20	26	14.78	+01	14	51.7	801
1986	UD3	1990	08	18.26450	20	26	13.83	+01	14	46.9	801
1986	WM3	1990	08	19.26770	00	06	05.51	+04	18	04.1	801
1986	WM3	1990	08	19.28821	00	06	04.65	+04	18	07.4	801
1986	WM3	1990	08	20.31414	00	05	23.05	+04	20	44.0	801
1986	WM3	1990	08	20.33749	00	05	22.06	+04	20	47.3	801
1987	RM1	1990	07	19.21711	20	14	22.28	-16	44	27.4	801
1987	RM1	1990	07	20.18733	20	13	24.22	-16	49	23.5	801
1987	RM1	1990	08	16.15791	19	49	09.66	-19	02	11.7	801
1987	RM1	1990	08	17.11785	19	48	33.57	-19	06	10.7	801
1987	RB6	1990	08	17.14474	20	59	12.82	-23	41	45.0	801
1987	RB6	1990	08	17.16585	20	59	11.60	-23	41	49.0	801
1987	RB6	1990	08	22.11283	20	54	58.45	-23	54	15.7	801
1987	RB6	1990	08	22.12879	20	54	57.64	-23	54	17.7	801
1987	SK	1990	08	16.20495	21	22	08.86	-17	23	21.2	801
1987	SK	1990	08	16.22267	21	22	07.68	-17	23	24.8	801
1987	SK	1990	08	22.13986	21	16	21.43	-17	43	00.5	801
1987	SK	1990	08	22.16172	21	16	20.13	-17	43	04.5	801
1987	SV17	1990	08	17.09114	20	16	19.98	-17	46	24.1	801
1987	SV17	1990	08	17.10774	20	16	19.07	-17	46	26.2	801
1987	SV17	1990	08	22.08076	20	12	16.50	-17	55	12.4	801
1987	SV17	1990	08	22.10407	20	12	15.40	-17	55	14.5	801
1987	UF1	1990	08	16.19547	21	15	25.25	-21	45	19.7	801
1987	UF1	1990	08	16.21324	21	15	24.20	-21	45	27.6	801
1987	UF1	1990	08	17.17710	21	14	31.51	-21	52	26.1	801
1987	UF1	1990	08	17.19583	21	14	30.44	-21	52	34.0	801
1987	UM1	1990	08	17.22139	22	18	31.21	-05	47	01.1	801
1987	UM1	1990	08	17.23904	22	18	30.19	-05	47	06.4	801
1987	UM1	1990	08	19.17666	22	16	40.46	-05	56	49.7	801
1987	UM1	1990	08	19.22967	22	16	37.33	-05	57	05.3	801
1987	WE1	1990	08	20.27086	23	00	08.85	-17	40	12.6	801
1987	WE1	1990	08	20.28849	23	00	07.82	-17	40	17.2	801
1988	BW3	1990	08	17.18158	21	15	05.61	-03	19	18.0	801
1988	BW3	1990	08	17.19976	21	15	04.58	-03	19	25.0	801
1988	BW3	1990	08	19.09175	21	13	19.78	-03	31	57.6	801
1988	BW3	1990	08	19.12334	21	13	17.95	-03	32	10.5	801
1988	CJ5	1990	08	17.26320	23	19	48.13	+03	13	06.0	801
1988	CJ5	1990	08	17.34349	23	19	46.02	+03	12	25.2	801
1988	CJ5	1990	08	19.20961	23	19	00.64	+02	56	30.2	801
1988	CJ5	1990	08	19.23490	23	18	59.92	+02	56	17.0	801
1989	CB1	1990	08	16.29746	23	32	26.83	-07	10	40.1	801

1989	CB1		1990	08	16.32755	23	32	25.72	-07	10	54.5	801
1989	CB1		1990	08	20.30232	23	29	55.94	-07	44	00.1	801
1989	CB1		1990	08	20.32313	23	29	55.03	-07	44	10.6	801
1989	CY1		1990	08	22.11606	21	15	33.41	-14	11	58.0	801
1989	EG		1990	08	17.22941	22	22	42.08	-04	52	52.7	801
1989	EG		1990	08	17.24319	22	22	41.22	-04	52	56.4	801
1989	EG		1990	08	19.18100	22	20	46.57	-05	01	10.0	801
1989	EG		1990	08	19.22027	22	20	44.16	-05	01	20.2	801
1989	EG		1990	08	20.23630	22	19	43.16	-05	05	48.9	801
1989	EG		1990	08	20.26035	22	19	41.65	-05	05	55.4	801
1989	FO		1990	08	16.20855	21	22	26.03	-18	02	26.9	801
1989	GR6		1990	08	16.16770	20	56	24.46	-25	20	49.2	801
1989	GR6		1990	08	16.19142	20	56	23.17	-25	21	02.3	801
1989	GR6		1990	08	17.14183	20	55	34.11	-25	29	48.3	801
1989	GR6		1990	08	17.16336	20	55	32.87	-25	29	59.4	801
1990	MB		1990	08	16.05819	16	51	57.40	+07	11	38.3	801
1990	MB		1990	08	16.07519	16	51	58.53	+07	11	34.7	801
1990	MB		1990	08	17.03768	16	53	08.53	+07	09	10.3	801
1990	MB		1990	08	17.05190	16	53	09.53	+07	09	08.4	801
1990	MJ		1990	08	16.07995	19	32	14.22	+28	58	28.9	801
1990	MJ		1990	08	16.09908	19	32	13.16	+28	58	40.9	801
1990	MJ		1990	08	17.20548	19	31	16.49	+29	08	23.7	801
1990	MJ		1990	08	17.21069	19	31	16.01	+29	08	26.0	801
1990	MJ		1990	08	18.23295	19	30	26.61	+29	16	45.2	801
1990	MJ		1990	08	18.25458	19	30	25.50	+29	16	54.8	801
1990	MJ		1990	08	20.14223	19	29	01.32	+29	30	36.2	801
1990	MJ		1990	08	20.16528	19	29	00.24	+29	30	45.0	801
1990	OA		1990	08	16.18807	21	06	52.11	-23	24	56.1	801
1990	OA		1990	08	16.20152	21	06	52.70	-23	25	09.5	801
1990	OA		1990	08	17.17492	21	07	44.70	-23	41	27.5	801
1990	OA		1990	08	17.18637	21	07	45.22	-23	41	38.4	801
1990	OL		1990	08	16.23062	21	40	32.65	-07	44	14.2	801
1990	OL		1990	08	16.23767	21	40	32.78	-07	44	27.4	801
1990	OL		1990	08	19.14855	21	41	36.74	-09	15	21.3	801
1990	OL		1990	08	19.15320	21	41	36.81	-09	15	29.7	801
1990	QO3	*	1990	08	16.28773	23	24	49.75	-07	52	45.3	17.5 801
1990	QO3		1990	08	16.32167	23	24	48.41	-07	52	48.6	801
1990	QO3		1990	08	17.24887	23	24	13.60	-07	54	07.5	801
1990	QO3		1990	08	17.26574	23	24	12.90	-07	54	09.9	801
1990	QO3		1990	08	18.20976	23	23	36.41	-07	55	33.3	801
1990	QO3		1990	08	18.22093	23	23	35.97	-07	55	34.2	801
1990	QO3		1990	08	19.24740	23	22	55.25	-07	57	09.1	801
1990	QO3		1990	08	19.27754	23	22	53.94	-07	57	12.0	801
1990	QO3		1990	08	20.28093	23	22	13.18	-07	58	47.5	801
1990	QO3		1990	08	20.29788	23	22	12.45	-07	58	49.1	801
1990	QP3	*	1990	08	19.24740	23	22	49.35	-07	54	24.1	17.5 801
1990	QP3		1990	08	19.27754	23	22	48.30	-07	54	32.6	801
1990	QP3		1990	08	20.28093	23	22	16.15	-07	59	08.8	801
1990	QP3		1990	08	20.29788	23	22	15.58	-07	59	13.2	801
1990	SA		1990	09	19.20329	23	05	47.98	-08	14	40.6	801
1990	SA		1990	09	19.20623	23	05	48.00	-08	14	57.0	801
4009	P-L		1990	08	16.11999	19	45	59.83	-22	42	16.9	801
4009	P-L		1990	08	16.16329	19	45	58.37	-22	42	15.7	801
4009	P-L		1990	08	17.07650	19	45	31.15	-22	41	43.4	801
4009	P-L		1990	08	17.11459	19	45	29.84	-22	41	42.1	801
4594	P-L		1990	08	16.04917	14	38	52.90	-00	58	36.2	801
2632			1990	08	16.31050	00	04	17.77	-08	52	59.9	801
2632			1990	08	16.33906	00	04	16.96	-08	53	02.9	801
3752			1990	08	19.10927	21	29	38.88	-03	59	47.5	801

3752	1990 08 19.11387	21 29 38.39	-04 00 04.2		801
3752	1990 08 20.17545	21 27 03.54	-05 09 58.7		801
3752	1990 08 20.17856	21 27 03.14	-05 10 11.7		801
4565	1990 07 19.16576	19 26 51.06	-00 16 01.2		801
4566	1990 08 17.13274	20 30 09.28	-02 21 47.3		801
4566	1990 08 17.15764	20 30 08.02	-02 21 50.8		801
4566	1990 08 19.08800	20 28 38.65	-02 26 23.7		801
4566	1990 08 19.11886	20 28 37.19	-02 26 28.3		801
4569	1990 08 17.08723	19 55 48.99	+02 04 09.9		801
4569	1990 08 17.10425	19 55 48.35	+02 04 02.1		801
4569	1990 08 18.24105	19 55 08.32	+01 55 15.4		801
4569	1990 08 18.26004	19 55 07.65	+01 55 06.9		801
4572	1990 08 19.10410	21 31 30.87	+01 38 29.8		801
4572	1990 08 19.13049	21 31 29.60	+01 38 15.5		801
4572	1990 08 20.19043	21 30 40.92	+01 28 35.8		801
4573	1990 08 17.16903	20 57 22.23	-12 54 45.6		801
4573	1990 08 17.19219	20 57 21.07	-12 54 47.5		801
4573	1990 08 22.10136	20 53 31.12	-13 01 02.2		801
4573	1990 08 22.12601	20 53 29.98	-13 01 04.1		801
4580	1990 07 18.28568	21 27 41.86	-01 56 57.3		801
4580	1990 07 18.31574	21 27 40.72	-01 57 05.3		801
4580	1990 07 22.27717	21 25 08.23	-02 15 39.9		801
4580	1990 07 22.27717	21 25 08.22	-02 15 39.1		801

807 Cerro Tololo
K. J. Meech, Institute for Astronomy, 2680 Woodlawn Drive, Honolulu, HI 96822, U.S.A.
Observer K. J. Meech
4-m reflector + CFCCD (Tek 4)
SAOC

2060	1990 04 30.00740	06 47 48.02	+16 26 48.1		807
2060	1990 04 30.01837	06 47 48.18	+16 26 48.0		807
2060	1990 04 30.02875	06 47 48.36	+16 26 48.2		807

877 Okutama
S. Hayakawa, 1-31-33, Nagano, Gyoda-Shi, Saitama-Ken, 361 Japan
Observers T. Hioki, S. Hayakawa
Measurer S. Hayakawa
0.30-m f/3.8 hyperboloid astrocamera

1979 QE10	1990 09 18.54965	23 50 44.44	+00 51 20.4	15.5	877
1979 QE10	1990 09 18.57986	23 50 43.09	+00 51 05.8		877
1989 VC2	1989 10 29.58576	01 52 34.05	+14 05 32.9	17	877
1989 VC2	1989 10 29.60330	01 52 33.12	+14 05 31.9		877
1989 VC2	1989 11 04.60602	01 47 51.12	+13 51 06.3	17	877
1989 VC2	1989 11 04.62326	01 47 50.37	+13 51 04.9		877

881 Toyota
T. Urata, 6-1, Muramatsuhara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan
Observers K. Suzuki, T. Urata
Measurer T. Urata
0.31-m f/5.7 reflector
AGK3

1990 OM	1990 08 25.57188	23 11 54.88	-08 28 35.2	15	881
1990 OM	1990 08 25.59549	23 11 54.06	-08 28 49.2		881
1990 OM	1990 08 26.56007	23 11 20.21	-08 37 42.7	15	881
1990 OM	1990 08 26.57118	23 11 19.73	-08 37 48.2		881

885 JCPM Yakiimo Station
T. Urata, 6-1, Muramatsuhara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan

Observer A. Natori
Measurer T. Urata
0.20-m f/4.0 hyperboloid astrocamera

1990 RB	1990 09 20.58681	00 02 55.34	+14 46 44.5	16	885
1990 RB	1990 09 20.59306	00 02 54.99	+14 46 44.2		885
1990 RB	1990 09 20.59931	00 02 54.63	+14 46 43.5		885

886 Susono
T. Furuta, 17-2 Mitsuike, Kagiya, Tokai 477, Japan
Observers M. Akiyama, T. Furuta
Measurer T. Furuta

2095	1990 09 21.54028	23 41 04.3	+00 34 28	15.5	886
2095	1990 09 21.55174	23 41 03.8	+00 34 23		886

896 Yatsugatake South Base Observatory
O. Muramatsu, 119-1, 2-8 Sakurazutsumi, Musashino, Tokyo 180, Japan
Observer Y. Kushida, R. Kushida
Measurer O. Muramatsu
0.20-m f/4.0 reflector

1989 GA	1990 08 24.68889	22 23 00.08	-12 06 54.4	17	w 896
1989 GA	1990 08 24.70712	22 22 59.02	-12 06 55.1		w 896
1989 GA	1990 08 26.66111	22 20 57.3	-12 14 56		w 896
1989 GA	1990 08 26.67778	22 20 56.3	-12 14 59		w 896

* * * * *

ORBITAL ELEMENTS.

Orbital elements have been computed by the following contributors:

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G. V. Williams, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, U.S.A. (W)

The name of the orbit computer is shown on the line giving T for a comet and Epoch for a displayed minor-planet orbit; for many of the minor planets (O-C) residuals are shown in full (in R.A. and Decl.); observations are identified by date and observatory code, X referring to an approximate and Y to a semiaccurate position. For displayed minor planets "Id." shows those involved in establishing the identifications (generally with the principal contributors first), "k" indicating key identifications and "d" (only) double (or multiple) designations; no identifier is shown if only the orbit computer is involved and the results were not previously published. J-P indicates that only the perturbations by the outer planets were considered, and a and n are then related by a gravitational constant augmented by the

masses of the inner planets. For the one-opposition orbits, equinox 1950.0 is used, and the columns headed Arc and O show the time span in days covered by the observations and the number of observations utilized in the computation (0 = 10 or more). In the note column N, D means that there are double (or multiple) designations, E means that the value of the eccentricity was assumed, F means both; the double designations are listed at the end; the codes for the orbit computers (column C) are as listed above.

Periodic Comet Holt-Olmstead (1990k)

T 1990 Sept. 28.10509 ET				Marsden
q 2.0382364		(1950.0)	P	Q
n 0.15908503	Peri.	0.02976	+0.96754345	-0.24444020
a 3.3732602	Node	14.60883	+0.23178809	+0.75739061
e 0.3957666	Incl.	14.72264	+0.10066756	+0.60548200
P 6.20				

From 13 observations 1990 Sept. 14-21.

Comet Mueller (1990j)

T 1991 Feb. 23.04186 ET				Marsden
q 1.6115418		(1950.0)	P	Q
	Peri.	233.21252	+0.13655785	-0.98579551
	Node	209.39415	+0.96045509	+0.15592630
e 1.0	Incl.	11.49026	+0.24264785	-0.06240356

From 14 observations 1990 Sept. 15-21.

One-opposition minor planets

Planet	H	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1966 BB		660224	333.84	37.59	129.23	6.62	0.1434	2.2482	27	4	D	I
1988 PV	13.4	880916	0.30	115.42	222.84	5.18	0.2122	2.2671	55	0		N
1990 FG	13.3	900330	189.81	359.24	356.40	25.63	0.0307	1.9086	40	0		N
1990 MR	14.4	900708	24.76	7.36	247.85	6.89	0.2173	2.3418	41	0	D	E
1990 OB	12.0	900728	308.85	191.73	198.30	17.37	0.2774	2.8484	31	8		M
1990 OD	13.0	900728	10.72	60.34	231.51	11.89	0.2420	2.6297	31	0		M
1990 OE	12.0	900728	320.52	137.17	228.49	12.73	0.1794	2.5744	31	8		M
1990 OF	13.5	900728	347.76	84.83	250.55	12.09	0.2949	2.6569	30	8		W
1990 OH	13.0	900728	340.71	131.82	216.71	13.21	0.3043	2.6538	28	7		W
1990 OJ	13.0	900728	10.72	19.60	271.13	12.73	0.1811	2.7676	32	8		W
1990 OK	14.0	900728	334.11	95.19	249.35	6.78	0.1988	2.3381	32	0		W
1990 OT	13.0	900728	334.91	69.94	278.57	6.74	0.1485	2.2875	28	8		W
1990 OV	13.5	900728	11.13	85.76	208.04	6.31	0.1305	2.2670	31	8		M
1990 OY	13.0	900728	338.87	188.00	154.14	14.11	0.2026	2.5466	31	8		M
1990 OA1	12.0	900728	43.52	4.49	264.00	14.80	0.1071	2.5720	29	8		W
1990 OB1	13.5	900728	32.19	37.85	231.10	8.64	0.2135	2.3320	29	0		W
1990 OC1	12.0	900728	31.33	38.85	247.48	10.90	0.0920	3.0320	29	8		W
1990 OF1	12.0	900728	0.54	139.55	159.72	14.37	0.1991	3.1076	32	8		M
1990 OH1	12.5	900728	359.18	39.84	238.72	27.48	0.2949	3.1274	30	8		W
1990 OY2	15.9	900817	19.96	157.76	134.70	2.82	0.1726	2.2801	21	9		N
1990 OO3	13.0	900728	173.54	354.36	147.90	7.08	0.0692	2.5164	3	6		W
1990 OR3	14.0	900728	12.80	334.58	324.31	5.61	0.0995	2.3870	28	0	D	W
1990 OT3	14.0	900728	50.72	307.49	300.86	2.79	0.1602	2.1961	3	6	E	W
1990 OY3	14.0	900728	349.12	6.48	324.27	6.00	0.1352	2.3741	27	0		M
1990 PA	11.5	900817	4.31	278.32	87.63	12.01	0.2268	2.7264	35	5		M
1990 PF	14.5	900817	351.84	193.92	142.21	1.42	0.1943	2.7462	7	9	E	M
1990 QA	11.5	900817	328.82	333.78	25.91	20.00	0.2116	3.0946	39	8		M
1990 QB	13.5	900817	322.69	58.69	331.73	23.24	0.2749	2.4273	8	6		M
1990 QG	13.8	900906	342.72	50.40	329.13	6.24	0.3842	3.1007	21	0		N

1990 QM	14.3	900906	32.38	130.18	160.49	2.24	0.2059	2.3006	11	0		N
1990 QY	13.5	900817	37.38	80.29	198.60	7.64	0.2661	3.1142	12	6		M
1990 QA1	15.0	900817	27.76	56.92	239.15	3.11	0.2086	2.3308	11	5		M
1990 QG1	13.7	900817	329.29	32.73	343.84	7.99	0.1207	2.4409	6	8		E
1990 QH1	13.3	900817	5.56	347.48	344.48	6.18	0.0626	2.4048	6	8		E
1990 QL1	12.7	900817	319.13	237.00	162.06	10.64	0.1921	3.1746	6	8		E
1990 QM1	13.2	900817	8.94	181.00	145.32	2.25	0.2000	3.2180	6	8	E	E
1990 QR1	13.5	900817	30.40	174.98	128.96	1.13	0.1000	2.8144	6	6	E	E
1990 QS1	12.5	900817	236.90	118.89	359.25	4.28	0.1500	2.6727	6	6	E	E
1990 QV1	13.2	900817	9.36	211.33	118.14	2.96	0.1026	2.9355	6	6		E
1990 QA2	13.8	900817	31.33	346.77	315.88	1.35	0.1156	2.6599	6	6	E	N
1990 QM2	13.5	900906	353.47	193.39	161.15	22.81	0.0928	1.9381	32	9		M
1990 QN2	14.1	900817	21.69	322.91	345.79	6.59	0.1827	2.3804	6	6		E
1990 QY2	14.3	900817	26.43	293.83	4.08	1.64	0.2000	2.5074	6	8	E	E
1990 QZ2	15.1	900817	339.70	17.74	352.29	2.27	0.2500	2.4093	6	8	E	E
1990 QB3	14.7	900817	314.09	239.74	159.31	3.99	0.1638	2.2221	6	6		E
1990 QG3	16.6	900817	5.23	276.13	45.07	1.29	0.3275	2.1983	6	6		E
1990 QH3	13.0	900817	359.97	356.54	341.24	17.17	0.2826	2.6741	8	8		W
1990 QO3	12.0	900817	333.33	15.64	354.47	10.24	0.0615	3.1322	11	0		W
1990 QP3	13.0	900817	358.27	244.22	97.32	2.54	0.1830	3.1533	8	0		W
1990 QU3	14.9	900817	27.63	206.87	86.11	1.98	0.1637	2.1540	7	6		E
1990 QV3	14.9	900817	27.68	286.60	0.01	2.99	0.2359	2.1751	7	6		E
1990 QX3	15.2	900817	354.18	8.37	337.90	5.78	0.3002	2.6297	5	6		E
1990 QY3	13.5	900817	44.42	295.16	338.04	2.91	0.2107	2.5344	5	6		E
1990 QZ3	14.4	900817	351.53	193.09	155.20	6.69	0.1370	2.4103	5	6		E
1990 QA4	13.7	900817	149.71	205.64	337.62	5.05	0.0306	2.3176	7	6		E
1990 QB4	12.4	900817	26.66	145.26	156.74	5.36	0.1234	3.2417	7	6		E
1990 QD4	13.9	900817	343.77	22.19	334.59	6.49	0.1742	2.3999	7	8		E
1990 QE4	14.0	900817	358.10	179.50	156.85	14.47	0.2860	2.6012	6	6		E
1990 QF4	13.4	900817	260.25	288.27	149.33	6.45	0.0236	2.3330	6	6		E
1990 QG4	12.3	900817	35.12	134.47	148.36	0.92	0.2234	3.2434	6	6		E
1990 QH4	15.5	900817	351.31	359.44	346.22	4.57	0.1895	2.2400	6	8		E
1990 QL4	12.0	900817	222.97	134.11	348.93	11.94	0.1000	2.9754	4	6		E
1990 QS4	14.1	900906	21.35	206.81	107.60	5.57	0.1221	2.2263	5	7		E
1990 QT4	13.0	900906	305.99	43.42	1.29	15.02	0.0888	2.5673	5	5		E
1990 QU4	14.1	900906	20.95	245.12	64.65	6.51	0.2065	2.2853	5	9		E
1990 QV4	12.1	900906	322.79	262.08	125.31	10.92	0.0848	3.0489	5	5		E
1990 QW4	14.0	900906	293.71	303.24	122.01	8.46	0.1392	2.2877	5	5		E
1990 QX4	14.4	900906	5.84	287.52	46.71	5.16	0.1830	2.1745	5	5		E
1990 QZ4	11.7	900906	340.69	236.28	138.01	15.20	0.2030	3.1318	5	5		E
1990 QB5	14.1	900906	318.74	335.72	66.18	5.86	0.1796	2.4417	5	5		E
1990 QC5	13.8	900817	50.74	253.83	13.01	3.41	0.1740	2.2259	4	8		E
1990 QD5	14.6	900817	300.70	264.38	139.11	5.77	0.0775	2.1926	4	8		E
1990 QE5	13.1	900817	285.38	83.94	354.17	11.04	0.2264	2.5586	4	8		E
1990 QF5	11.7	900817	105.11	237.36	351.51	15.45	0.0500	3.1799	4	8	E	E
1990 QJ5	15.2	900817	6.54	296.89	27.36	2.04	0.2142	2.2222	4	6		E
1990 RC	13.0	900906	310.81	296.73	100.60	27.02	0.1957	2.6827	7	8		W
1990 SC	15.3	900926	16.69	2.62	333.92	6.59	0.2935	2.6543	2	5		N
1990 SN	18.0	900906	353.70	6.19	359.97	6.00	0.3124	2.1625	4	9	E	M
1990 SO	19.5	900906	9.71	339.93	352.89	28.43	0.2289	1.9078	2	9	E	M

1966 BB = 1966 CE (H. Oishi)
1990 MR = 1990 OF4 (E. Bowell, R. Nagata)
1990 OR3 = 1990 PE (G. V. Williams)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

(106) Dione	Obs. 130	M 208.08779	Peri. 330.57188
H 7.42	G 0.17	n 0.17534127	Node 61.99224
rms res. 0".84	(M-P)	1902-1987	e 0.1804669	Incl. 4.62191

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(181) Eucharis Obs. 64 M 169.56611 Peri. 313.28245
H 7.77 G 0.05 Opp. 24 n 0.17729915 Node 143.52495
rms res. 0".92 (M-P) 1906-1990 e 0.2029339 Incl. 18.68806

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(250) Bettina Obs. 71 M 206.29118 Peri. 70.43648
H 7.54 G 0.25 Opp. 24 n 0.17596193 Node 23.98544
rms res. 0".87 (M-P) 1916-1986 e 0.1219612 Incl. 12.87949

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(259) Aletheia Obs. 74 M 280.95326 Peri. 165.32393
H 7.86 G 0.15 Opp. 24 n 0.17651042 Node 87.06019
rms res. 0".96 (M-P) 1904-1990 e 0.1116883 Incl. 10.76766

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams
(307) Nike Obs. 60 M 104.83517 Peri. 323.06254
H 10.00 G 0.15 Opp. 25 n 0.19898963 Node 100.78415
rms res. 1".37 (M-P) 1891-1989 e 0.1441176 Incl. 6.12691

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(323) Brucia Obs. 30 M 359.03750 Peri. 291.36594
H 9.67 G 0.25 Opp. 15 n 0.26811629 Node 96.93713
rms res. 0".97 (M-P) 1923-1989 e 0.3003134 Incl. 24.24742

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams
(353) Ruperto-Carola Obs. 33 M 257.95779 Peri. 320.41200
H 11.22 G 0.15 Opp. 17 n 0.21757606 Node 102.36645
rms res. 1".22 (M-P) 1893-1989 e 0.3263156 Incl. 5.69460

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams
(379) Huenna Obs. 188 M 252.60916 Peri. 181.28956
H 9.08 G 0.25 Opp. 45 n 0.17825338 Node 171.75060
rms res. 1".19 (M-P) 1894-1989 e 0.1944018 Incl. 1.67171

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(382) Dodona Obs. 60 M 119.82159 Peri. 272.35111
H 8.86 G 0.25 Opp. 24 n 0.17923597 Node 313.07442
rms res. 0".94 (M-P) 1924-1986 e 0.1781261 Incl. 7.40556

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams
(400) Ducrosa Obs. 61 M 57.41155 Peri. 241.14344
H 10.00 G 0.25 Opp. 17 n 0.17769017 Node 326.79245
rms res. 1".19 (M-P) 1895-1989 e 0.1073786 Incl. 10.50179

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(551) Ortrud Obs. 124 M 290.71996 Peri. 69.53722
H 9.54 G 0.15 Opp. 31 n 0.19276642 Node 6.10800
rms res. 0".95 (M-P) 1904-1990 e 0.1197137 Incl. 0.40367

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(596) Scheila Obs. 37 M 253.95202 Peri. 175.33406
H 8.89 G 0.15 Opp. 19 n 0.19594908 Node 70.44525
rms res. 0".91 (M-P) 1908-1989 e 0.1596412 Incl. 14.63553

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(673) Edda Obs. 112 M 34.80313 Peri. 238.54591
H 10.27 G 0.25 Opp. 26 n 0.20853503 Node 226.55404
rms res. 0".93 (M-P) 1908-1989 e 0.0125766 Incl. 2.87260

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(717) Wisibada Obs. 41 M 53.15639 Peri. 20.45319
H 11.04 G 0.15 Opp. 15 n 0.17507017 Node 344.15432
rms res. 0".94 (M-P) 1911-1989 e 0.2422871 Incl. 1.67960

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(730) Athanasia Obs. 15 M 125.47181 Peri. 122.99182
H 13.6 G 0.25 Opp. 7 n 0.29330334 Node 94.69726
rms res. 1".00 (M-P) 1912-1990 e 0.1773561 Incl. 4.23543

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(839) Valborg Obs. 15 M 232.40525 Peri. 338.33165
H 10.77 G 0.25 Opp. 10 n 0.23328101 Node 337.78110
rms res. 1".01 (M-P) 1920-1990 e 0.1533504 Incl. 12.57846

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(873) Mechthild Obs. 63 M 70.58543 Peri. 107.57407
H 11.39 G 0.15 Opp. 15 n 0.23145763 Node 149.97509
rms res. 1".03 (M-P) 1930-1989 e 0.1482667 Incl. 5.27324

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(942) Romilda Obs. 39 M 154.22058 Peri. 322.46486
H 10.4 G 0.25 Opp. 13 n 0.17633359 Node 71.00450
rms res. 0".89 (M-P) 1920-1989 e 0.1778531 Incl. 10.58427

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(946) Poesia Obs. 45 M 255.42464 Peri. 40.66791
H 10.51 G 0.15 Opp. 16 n 0.17848008 Node 69.29301
rms res. 0".91 (M-P) 1921-1990 e 0.1342657 Incl. 1.43350

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1003) Lilofee Obs. 73 M 277.11934 Peri. 319.33260
H 10.57 G 0.15 Opp. 23 n 0.17632434 Node 138.96250
rms res. 0".94 (M-P) 1923-1990 e 0.1484563 Incl. 1.83968

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1035) Amata Obs. 28 M 343.81349 Peri. 323.62196
H 10.6 G 0.25 Opp. 10 n 0.17743511 Node 1.62025
rms res. 0".95 (M-P) 1913-1989 e 0.2046852 Incl. 18.09684

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1127) Mimi Obs. 25 M 332.10255 Peri. 281.44629
H 10.92 G 0.15 Opp. 11 n 0.23559809 Node 128.38505
rms res. 1".16 (M-P) 1933-1990 e 0.2607093 Incl. 14.77628

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1165) Imprinetta Obs. 38 M 270.82587 Peri. 98.89660
H 10.65 G 0.15 Opp. 13 n 0.17832794 Node 203.28671
rms res. 0".92 (M-P) 1909-1987 e 0.2110484 Incl. 12.80096

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1258) Sicilia Obs. 47 M 66.76244 Peri. 58.48852
H 10.53 G 0.15 Opp. 11 n 0.17334795 Node 299.50174
rms res. 0".87 (M-P) 1932-1989 e 0.0286025 Incl. 7.73775

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1314) Paula Obs. 25 M 115.35264 Peri. 143.41578
H 12.73 G 0.25 Opp. 10 n 0.28347300 Node 264.23429
rms res. 0".77 (M-P) 1933-1989 e 0.1747450 Incl. 5.23454

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1324) Knysna Obs. 23 M 158.27294 Peri. 329.30992
H 12.5 G 0.25 Opp. 7 n 0.30520633 Node 303.94402
rms res. 0".85 (M-P) 1934-1986 e 0.1637036 Incl. 4.51397

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1400) Tirela Obs. 37 M 5.30667 Peri. 109.44989
H 11.8 G 0.25 Opp. 10 n 0.17956087 Node 210.32783
rms res. 0".85 (M-P) 1930-1989 e 0.2461819 Incl. 15.55639

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1409) Isko Obs. 70 M 207.81718 Peri. 204.80494
H 10.57 G 0.15 Opp. 18 n 0.22519750 Node 177.26955
rms res. 0".82 (M-P) 1933-1987 e 0.0576168 Incl. 6.69789

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1492) Oppolzer Obs. 72 M 127.48984 Peri. 81.29143
H 12.98 G 0.25 Opp. 11 n 0.30769695 Node 137.31816
rms res. 0".76 (M-P) 1938-1990 e 0.1167658 Incl. 6.05821

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1532) Inari Obs. 32 M 263.07305 Peri. 130.29528
H 11.01 G 0.25 Opp. 12 n 0.18925039 Node 330.46658
rms res. 0".99 (M-P) 1936-1990 e 0.0494800 Incl. 8.79043

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1540) Kevola Obs. 30 M 190.35802 Peri. 112.45354
H 10.7 G 0.25 Opp. 13 n 0.20492446 Node 52.30482
rms res. 1".08 (M-P) 1933-1990 e 0.0840086 Incl. 11.96938

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(1791) Patsayev Obs. 42 M 88.72215 Peri. 72.98895
H 12.0 G 0.25 Opp. 12 n 0.21656048 Node 198.68356
rms res. 0".88 (M-P) 1957-1990 e 0.1425366 Incl. 5.37131

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2135) Aristaeus Obs. 16 M 281.73716 Peri. 290.62963
H 18.0 G 0.25 Opp. 4 n 0.48706570 Node 190.76031
rms res. 0".76 (M-P) 1977-1990 e 0.5033626 Incl. 23.04169

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2208) Pushkin Obs. 22 M 291.67390 Peri. 345.67467
H 10.96 G 0.15 Opp. 8 n 0.15075597 Node 79.09297
rms res. 1".08 (M-P) 1968-1990 e 0.0484406 Incl. 5.41926

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2371) Dimitrov Obs. 28 M 216.87141 Peri. 283.41861
H 12.72 G 0.25 Opp. 9 n 0.25850291 Node 234.85467
rms res. 0".91 (M-P) 1954-1990 e 0.0128521 Incl. 1.77926

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2395) Aho Obs. 31 M 88.74183 Peri. 160.46119
H 12.4 G 0.25 Opp. 8 n 0.18242581 Node 99.02795
rms res. 0".94 (M-P) 1967-1990 e 0.0558959 Incl. 0.30305

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2417) McVittie Obs. 27 M 263.38905 Peri. 20.38286
H 12.25 G 0.15 Opp. 10 n 0.17248658 Node 84.30685
rms res. 0".93 (M-P) 1958-1990 e 0.2109874 Incl. 3.10065

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2460) Mitlincoln Obs. 30 M 253.22584 Peri. 303.58426
H 11.96 G 0.25 Opp. 12 n 0.29062080 Node 175.65258
rms res. 0".82 (M-P) 1951-1990 e 0.1095563 Incl. 3.74022

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2555) Thomas Obs. 27 M 2.22535 Peri. 87.82366
H 12.03 G 0.31 Opp. 7 n 0.20274866 Node 283.53313
rms res. 1".05 (M-P) 1961-1990 e 0.0812016 Incl. 0.89961

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2657) Bashkiria Obs. 13 M 302.93661 Peri. 8.96905
H 11.93 G 0.15 Opp. 6 n 0.17325258 Node 50.02004
rms res. 0".91 (M-P) 1962-1990 e 0.1404998 Incl. 2.25027

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2796) Kron Obs. 31 M 131.07781 Peri. 53.69932
H 12.51 G 0.50 Opp. 6 n 0.22951573 Node 158.22198
rms res. 1".18 (M-P) 1980-1990 e 0.1144489 Incl. 14.02906

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(2998) Berendeya Obs. 23 M 12.71747 Peri. 203.76458
H 14.4 G 0.25 Opp. 5 n 0.26137957 Node 156.96936
rms res. 0".86 (M-P) 1975-1990 e 0.1941758 Incl. 3.07033

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3005) Pervictoralex Obs. 26 M 80.69975 Peri. 77.46028
H 13.88 G 0.25 Opp. 7 n 0.27052428 Node 177.11885
rms res. 1".28 (M-P) 1964-1990 e 0.1865020 Incl. 2.35974

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3256) Daguerre Obs. 14 M 288.26603 Peri. 267.49363
H 12.38 G 0.15 Opp. 4 n 0.21281447 Node 174.05571
rms res. 0".84 (M-P) 1976-1990 e 0.0961229 Incl. 7.83276

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3270) Dudley Obs. 38 M 295.22157 Peri. 326.50945
H 14.7 G 0.25 Opp. 3 n 0.31279969 Node 146.47350
rms res. 0".84 (M-P) 1982-1990 e 0.3301111 Incl. 27.62409

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3283) 1979 QA10 Obs. 21 M 11.47859 Peri. 351.41545
H 12.9 G 0.25 Opp. 9 n 0.26568425 Node 356.23128
rms res. 0".92 (M-P) 1953-1990 e 0.1002745 Incl. 6.88440

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3311) 1976 QM1 Obs. 25 M 197.85944 Peri. 12.99908
H 12.2 G 0.25 Opp. 9 n 0.21169243 Node 156.87221
rms res. 1".15 (M-P) 1974-1990 e 0.0411316 Incl. 0.92917

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3329) 1985 RT1 Obs. 83 M 283.31011 Peri. 71.37438
H 11.9 G 0.25 Opp. 7 n 0.18990531 Node 11.58616
rms res. 0".85 (M-P) 1959-1990 e 0.0823420 Incl. 10.40908

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
(3343) Nedzel Obs. 27 M 102.39086 Peri. 228.97775
H 13.3 G 0.25 Opp. 4 n 0.27396950 Node 43.14850
rms res. 0".80 (M-P) 1982-1990 e 0.3118679 Incl. 25.08336

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell	
(3352) McAuliffe	Obs. 17	M	283.00576	Peri.	15.59199
H 15.9 G 0.25	Opp. 3	n	0.38274285	Node	106.90083
rms res. 0".80 (M-P)	1981-1990	e	0.3694633	Incl.	4.77741
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell	
(3553) Mera	Obs. 50	M	254.70751	Peri.	288.83904
H 16.8 G 0.25	Opp. 3	n	0.46735055	Node	231.96794
rms res. 0".80 (M-P)	1985-1990	e	0.3205632	Incl.	36.76159
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell	
(3600) 1978 SL7	Obs. 19	M	216.04666	Peri.	145.01095
H 13.0 G 0.25	Opp. 8	n	0.24007716	Node	5.02493
rms res. 0".92 (M-P)	1951-1990	e	0.1368299	Incl.	7.91759
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell	
(3618) 1979 QP8	Obs. 14	M	19.08657	Peri.	94.21559
H 12.5 G 0.25	Opp. 7	n	0.17714145	Node	233.58435
rms res. 0".92 (M-P)	1962-1990	e	0.1927848	Incl.	1.99500
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell	
(3635) 1981 WO1	Obs. 21	M	215.84297	Peri.	249.00244
H 14.7 G 0.25	Opp. 4	n	0.40993240	Node	234.80144
rms res. 0".76 (M-P)	1981-1990	e	0.0842745	Incl.	19.22297
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell	
(3773) 1984 YY	Obs. 29	M	15.28904	Peri.	286.06650
H 13.4 G 0.25	Opp. 5	n	0.30923019	Node	63.08290
rms res. 1".11 (M-P)	1974-1990	e	0.1836084	Incl.	1.32685
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell	
(3811) 1953 TH	Obs. 30	M	328.23118	Peri.	67.67050
H 11.7 G 0.25	Opp. 7	n	0.23827171	Node	338.49741
rms res. 0".84 (M-P)	1912-1990	e	0.1281958	Incl.	10.22457
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell	
(3886) 1981 RU3	Obs. 22	M	42.32385	Peri.	122.75982
H 12.3 G 0.25	Opp. 5	n	0.21338062	Node	185.07410
rms res. 0".64 (M-P)	1953-1990	e	0.1014711	Incl.	5.06179
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell	
(3946) Shor	Obs. 18	M	92.00609	Peri.	274.57486
H 12.1 G 0.25	Opp. 6	n	0.18187298	Node	325.63572
rms res. 0".81 (M-P)	1974-1990	e	0.1374649	Incl.	0.73900
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell	
(3988) 1986 LA	Obs. 58	M	70.33062	Peri.	86.52794
H 18.6 G 0.25	Opp. 3	n	0.51341305	Node	229.35860
rms res. 0".80 (M-P)	1986-1990	e	0.3167866	Incl.	10.77191
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell	
(4099) 1988 AB5	Obs. 38	M	281.63895	Peri.	301.19916
H 12.5 G 0.25	Opp. 5	n	0.23894136	Node	135.54274
rms res. 0".80 (M-P)	1951-1990	e	0.0765518	Incl.	15.63328
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Bowell	
(4167) 1978 TQ7	Obs. 29	M	73.75788	Peri.	113.58103
H 12.2 G 0.25	Opp. 5	n	0.23742583	Node	160.22484
rms res. 1".48 (M-P)	1968-1990	e	0.0902645	Incl.	15.03510

(4588)* 1931 EE = 1936 FB1 = 1974 SU3 = 1981 CZ = 1984 SG2 = 1989 RN1
Discovered 1931 Mar. 13 by M. Wolf at Heidelberg.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Kaneda
M 338.26709	(1950.0)	P	Q
n 0.19508507	Peri. 123.77734	-0.13129609	-0.98844883
a 2.9443314	Node 333.45701	+0.84425123	-0.07146432
e 0.0983737	Incl. 9.75277	+0.51961639	-0.13364787
P 5.05	H 12.2	G 0.25	

Residuals in seconds of arc

310313	024	0.3+	0.1-	810205	688	0.1+	0.9+	890905	511	0.8+	2.7+
310315	024	0.0	1.4+	840925	688	0.2+	1.3-	890906	511	0.7-	0.1+
310323	024	1.8+	3.2-	840925	688	0.4+	0.7-	890906	511	1.1-	1.2+
360324	024	1.0+	4.3+	840928	688	2.2-	1.0-	890908	511	0.0	1.7+
740922	095	1.0+	0.2-	840928	688	1.4+	1.2-	890908	511	(2.3+	4.1+)
810205	688	0.2+	1.0-	890905	511	1.3-	1.6+				

(4589)* 1933 OB = 1975 VC2 = 1986 NH = 1989 GY
Discovered 1933 July 24 by K. Reinmuth at Heidelberg.
Id. L. D. Schmadel (MPC 14612), C. M. Bardwell (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Bardwell
M 6.38265	(1950.0)	P	Q
n 0.25960446	Peri. 150.34046	+0.98484711	+0.17291382
a 2.4336677	Node 199.71552	-0.16586017	+0.91670509
e 0.1854995	Incl. 2.26003	-0.05066132	+0.36021187
P 3.80	H 13.6	G 0.25	

Residuals in seconds of arc

330724	024	0.1+	1.0-	890406	809	0.8+	1.3+	890409	809	1.5+	0.5-
330727	024	0.4-	0.2-	890407	809	0.6+	0.5+	900626	801	0.3-	0.1+
330825	024	0.6+	0.0	890407	809	0.4+	0.5+	900626	801	0.2-	0.6+
330827	024	0.1+	0.1+	890407	809	1.6+	0.5+	900816	801	0.0	0.3+
751102	095	1.5-	3.8+	890408	809	1.4-	1.3+	900816	801	0.1+	0.4+
860707	010	(5.7+	6.8-)	890408	809	0.3-	0.1-	900817	801	0.1-	0.2+
860708	010	(12.9+	3.3-)	890408	809	1.2-	0.2+	900817	801	0.2-	0.3+
890406	809	1.2+	1.5+	890409	809	1.9-	0.1+				
890406	809	0.1-	1.2+	890409	809	0.8+	1.2-				

(4590)* 1968 OG1 = 1982 FV = 1989 AQ2
Discovered 1968 July 25 by G. Plougin and Y. Belyaev at Cerro El Roble.
Id. C. M. Bardwell (MPC 14342), S. Nakano (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Bardwell
M 107.58473	(1950.0)	P	Q
n 0.26952834	Peri. 44.80387	-0.83908422	+0.54208441
a 2.3735575	Node 167.78130	-0.53967816	-0.81892809
e 0.1801507	Incl. 12.45084	-0.06844825	-0.18841784
P 3.66	H 13.6	G 0.25	

Residuals in seconds of arc

680725	805	0.2+	1.1-	820324	675	0.1-	0.6+	900604	413	1.4+	0.4+
680728	805	0.1-	0.5-	890111	413	0.9-	0.7-	900604	413	1.0-	0.0
680730	805	0.6+	0.5+	890111	413	0.1+	0.2-	900817	801	0.1+	0.2-
680822	805	0.6-	0.3-	890112	413	0.6-	0.1-	900817	801	0.6-	0.1-
820324	675	0.2-	0.9-	890112	413	1.4+	0.3-	900820	801	0.2+	0.0

(4591)* 1975 VZ = 1978 LW = 1988 FG1
Discovered 1975 Nov. 1 by T. M. Smirnova at the Crimean Astrophysical Observatory.
Id. E. Bowell (MPC 10829), S. Nakano (MPC 13447)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	335.35998		(1950.0)	P	Q
n	0.25618991	Peri.	247.90638	+0.87207713	-0.48853625
a	2.4552442	Node	141.32195	+0.46411340	+0.80718002
e	0.2342309	Incl.	2.61634	+0.15517804	+0.33134989
P	3.85	H	13.9	G 0.25	

Residuals in seconds of arc

751101	095	1.8+	0.2+	900727	675	0.2+	1.0-	900820	372	1.1-	1.9+
751107	095	0.8-	1.0-	900727	675	0.9+	1.0-	900822	801	0.5+	0.3+
751202	095	0.7-	0.1-	900730	675	0.2+	1.0-	900822	801	1.6+	0.2+
780610	675	1.1+	0.4-	900730	675	0.2-	0.5-	900824	372	0.0	0.3-
780611	675	1.2-	0.3-	900818	372	1.7-	0.7-	900824	372	1.2+	2.6+
880317	033	0.4-	0.1+	900818	372	0.0	0.0				
880317	033	0.3+	0.5-	900820	372	1.3-	0.5-				

(4592)* 1979 SQ11 = 1951 WE1 = 1978 NT7

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

Id. S. J. Bus (k, MPC 10761), B. G. Marsden (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Marsden

M	351.60853		(1950.0)	P	Q
n	0.17327033	Peri.	300.42399	+0.98131438	-0.19226970
a	3.1865440	Node	70.66214	+0.17910001	+0.89873643
e	0.1650538	Incl.	0.44810	+0.07032270	+0.39408780
P	5.69	H	12.2	G 0.25	

Residuals in seconds of arc

511129	711	(2.3+	12.0+)Y	791116	095	0.8-	0.2-	900822	675	0.1-	0.4-
511129	711	0.7-	3.2+ Y	791122	095	0.1-	0.1+	900823	675	0.3-	0.3-
770424	675	1.0-	0.2+	851110	095	(3.7+	0.4+)	900823	675	0.9-	0.8-
770425	675	0.8-	0.6+	851120	095	0.1+	0.6-	900827	675	0.5-	0.3-
780705	675	1.7+	0.6+	870228	801	1.0+	0.8-	900828	675	1.0+	1.6-
780706	675	0.2-	0.9+	900816	801	0.0	1.0+	900828	675	1.0+	0.6+
790924	095	0.1-	1.0-	900817	801	0.3-	0.7+				
791014	095	1.2+	0.8-	900817	801	0.3-	0.8+				

(4593)* 1980 FV1 = 1977 RP8

Discovered 1980 Mar. 16 by C.-I. Lagerkvist at the European Southern Observatory.

Id. E. Bowell (MPC 10952)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	129.80559		(1950.0)	P	Q
n	0.18727138	Peri.	49.13761	+0.75586044	-0.65429186
a	3.0256715	Node	351.62950	+0.54000131	+0.64373719
e	0.1156552	Incl.	9.49906	+0.37023449	+0.39686848
P	5.26	H	11.5	G 0.25	

Residuals in seconds of arc

770908	675	0.3-	0.6+	800317	809	0.3-	0.3+	900128	399	1.5+	0.6+
770909	675	0.1-	0.3+	800317	809	0.2+	0.5-	900130	399	0.1+	0.0
800221	095	0.8-	0.8-	800317	809	0.1-	0.1-	900130	399	0.4+	0.6+
800316	809	0.2-	0.4+	800323	809	0.4+	0.4+	900130	399	0.0	1.6-
800316	809	0.2+	0.2+	880915	095	0.9-	2.4-	900328	801	0.5-	0.1-
800316	809	0.1+	0.4+	880915	095	1.1+	1.6+	900328	801	0.3-	0.3-
800316	809	0.1-	0.1-	900128	399	1.3-	0.0	900329	801	0.5-	0.0
800317	809	0.3+	0.3-	900128	399	1.1+	1.1+	900329	801	0.4-	0.1-

(4594)* 1980 KR1 = 1980 LS = 1980 MF = 1954 KA = 1978 YV1
= 1986 CP = 1987 RK1

Discovered 1980 May 17 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Id. B. G. Marsden (d, MPC 9203), C. M. Bardwell (MPC 12959), W. Landgraf (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell

M	81.57184	(1950.0)	P	Q	
n	0.30340811	Peri.	82.89975	-0.43897853	+0.89812839
a	2.1934004	Node	160.99696	-0.85239161	-0.40721764
e	0.1425080	Incl.	4.53634	-0.28412392	-0.16594937
P	3.25	H	14.3	G 0.25	

Residuals in seconds of arc

540530	760	0.0	0.7-	870916	809	0.6-	0.3+	870928	809	0.2+	0.9+
540530	760	0.2-	1.7-	870916	809	0.5-	0.6+	871001	809	0.3+	1.0+
781222	095	1.7+	0.8+	870917	809	0.5-	0.8-	871001	809	0.2+	1.0+
800517	095	0.5+	2.2+	870917	809	0.4-	0.9-	871001	809	0.2+	1.0+
800518	095	1.2-	1.2+	870917	809	0.3-	0.9-	900719	801	0.4+	0.5-
800610	675	0.9+	1.2+	870918	809	0.3-	0.0	900719	801	0.5+	0.7-
800620	675	0.0	3.0+	870918	809	0.1-	0.0	900722	801	0.4+	0.5-
860207	046	0.5-	2.8+	870918	809	0.0	0.0	900722	801	0.5+	0.4-
860208	046	0.4+	0.8-	870924	809	1.4-	0.4+	900817	801	0.3+	0.8-
870913	809	1.9-	0.5-	870924	809	0.0	0.9+	900817	801	0.5+	0.8-
870913	809	0.7+	0.3-	870924	809	0.1+	0.8+	900822	801	0.4+	0.5-
870913	809	0.8+	0.3-	870928	809	0.4-	1.1+	900822	801	0.3+	0.4-
870916	809	0.9-	0.4+	870928	809	0.0	0.9+				

(4595)* 1981 EZ2

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

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	116.84870	(1950.0)	P	Q	
n	0.24422196	Peri.	345.18000	-0.91254839	+0.39806650
a	2.5348148	Node	218.70526	-0.35828194	-0.88873343
e	0.1022594	Incl.	8.62722	-0.19720420	-0.22736743
P	4.04	H	13.1	G 0.25	

Residuals in seconds of arc

810202	413	0.5+	0.8-	810405	413	0.3-	1.3-	820821	413	0.6+	0.4-
810214	413	0.1+	0.9-	810406	413	1.1-	1.0+	890307	413	0.9-	0.1-
810302	413	0.5-	0.5+	810406	413	0.6-	0.1-	890307	413	0.4+	0.7-
810302	413	0.4+	0.0	810407	413	0.1-	0.5+	900722	801	0.4+	0.2+
810307	413	0.4-	1.1+	810407	413	0.1+	0.7-	900722	801	0.2+	0.2+
810307	413	0.8+	0.0	810410	413	1.3-	1.2+	900728	675	0.1-	0.0
810310	413	0.6-	1.6+	810410	413	1.2+	2.6-	900728	675	1.1+	2.0+
810310	413	1.1+	0.2-	810412	413	0.7-	1.2+	900730	675	0.3+	2.1-
810312	413	0.3+	1.0+	810412	413	0.0	0.6-	900730	675	0.3-	0.1-
810312	413	1.6+	0.2-	810429	413	1.1+	1.1-	900822	801	1.5-	0.0
810405	413	1.2-	0.7+	820821	413	0.7-	0.0	900822	801	0.2-	0.3+

(4596)* 1981 QB

Discovered 1981 Aug. 28 by C. T. Kowal at Palomar.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell

M	243.61103	(1950.0)	P	Q	
n	0.29405604	Peri.	248.22391	+0.65879785	-0.70384625
a	2.2396628	Node	153.89918	+0.68321948	+0.70758163
e	0.5176006	Incl.	37.14858	-0.31495482	+0.06267933
P	3.35	H	16.1	G 0.25	

Residuals in seconds of arc

810828	675	(0.9-	3.1-)	810905	801	0.3+	2.2-	820226	474	0.4+	1.4-
810828	675	2.2-	2.5+	810905	474	2.8-	1.4-	820226	474	1.1+	1.0-
810829	675	0.2+	0.0	810905	474	(9.7-	3.4+)	820324	801	1.0+	0.5+
810829	675	(0.6+	6.9+)	810906	474	(4.2+	0.5-)	881220	675	0.5-	0.8-
810830	675	1.4-	0.2-	810906	474	(3.7+	2.4-)	881220	675	0.6-	0.0
810830	675	0.1-	1.1+	810907	801	0.2+	0.3+	881224	675	0.1+	0.1-
810831	675	(1.2-	3.2-)	810921	474	0.4+	2.4-	881224	675	0.8+	0.3-
810831	675	(1.0+	3.1+)	810921	474	1.2+	0.9-	881224	675	0.8+	0.5-
810901	675	(3.0-	6.5-)	810923	474	(2.0+	6.8+)	881224	675	1.0+	0.3+
810901	675	(2.1+	3.3+)	810923	474	1.5+	1.7+	890117	675	0.7-	1.1-
810901	474	0.5+	0.2-	810929	474	2.5+	1.1-	890117	675	0.7-	1.3-
810901	474	0.9+	2.8-	811017	474	1.1+	0.1+	890117	675	0.9-	1.3-
810902	675	1.0+	0.2+	811017	474	0.1-	1.4+	890118	675	0.2-	0.1+
810902	675	(0.5-	3.7+)	811028	474	0.5-	0.8+	890118	675	0.5-	0.1-
810902	474	0.3+	2.0-	811028	474	0.0	0.5+	890118	675	0.1-	0.3-
810902	474	(2.6-	5.1-)	811127	474	1.6+	0.0	890215	675	0.8+	0.9-
810902	474	0.6-	2.3+	811127	474	1.8-	0.5+	890215	675	0.9+	1.0-
810902	474	0.9-	0.5-	811226	474	1.8+	2.9+	890215	675	0.8+	0.7-
810902	474	0.5-	1.4+	811226	474	2.4-	1.6-	890217	675	1.0+	0.1-
810903	675	1.3-	2.1-	820128	474	0.0	0.7-	890217	675	0.6+	0.2-
810903	675	(1.1+	4.7+)	820128	474	0.4-	0.2-	890217	675	0.5+	0.3-

(4597)* 1983 UA1 = 1952 HR1 = 1952 HQ2 = 1975 XG7 = 1981 EO48 = 1987 TE = 1990 KP1

Discovered 1983 Oct. 30 by S. J. Bus at Palomar.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Nakano
M 37.59369	(1950.0)	P	Q
n 0.23418011	Peri. 162.94008	-0.60463533	+0.79249443
a 2.6067700	Node 69.78554	-0.74030892	-0.52218408
e 0.1236836	Incl. 4.87845	-0.29386872	-0.31508151
P 4.21	H 12.2	G 0.25	

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

520420	094	(0.04+	0.01-)X	831104	675	0.3+	0.4+	871014	046	1.3+	1.2-
520426	711	0.6+	1.6+ Y	871003	399	2.3-	0.7+	900519	033	0.6-	0.5-
751201	095	1.6+	1.8-	871003	399	0.7-	0.8+	900519	033	0.7-	1.2-
810301	095	0.4-	1.4+	871003	399	1.1-	0.6+	900520	033	1.0+	0.5-
831030	675	0.2+	0.0	871014	046	0.8+	0.1+				

(4598)* 1985 PG1 = A923 VC = 1980 TC9

Discovered 1985 Aug. 15 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. S. Nakano (MPC 10943), L. D. Schmadel (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5			Nakano
M 340.42175	(1950.0)	P	Q
n 0.18960117	Peri. 184.05414	+0.96591527	-0.25676859
a 3.0008345	Node 190.99268	+0.24206625	+0.94089430
e 0.1019116	Incl. 9.91295	+0.09171490	+0.22087960
P 5.20	H 12.2	G 0.25	

Residuals in seconds of arc

231107	754	0.1-	0.1- Y	850918	688	1.4-	0.6+	880316	809	2.5-	1.6-
231109	754	(7.6+	6.7-)Y	850918	688	1.1+	0.2+	880316	809	0.4-	1.0-
801013	095	1.4+	3.4-	851012	688	2.6-	2.8-	880321	809	1.0-	0.9-
850815	688	1.0+	1.4+	851012	688	1.3+	0.3-	880321	809	0.1-	0.4-
850815	688	0.2-	1.3+	870130	801	0.4-	0.1+	880321	809	1.5+	1.3-
850914	688	1.3+	0.5-	880315	809	0.5+	2.0-	900727	675	0.0	2.2-
850914	688	0.1+	0.6-	880315	809	0.0	1.9-	900727	675	(0.5-	4.6-)

900730 675 (1.8- 5.6-) 900817 801 0.2+ 0.4- 900828 657 (0.6+ 4.8-)
900730 675 (2.2- 4.2-) 900818 801 0.2- 0.6- 900828 657 0.4+ 0.9-
900817 801 0.2+ 0.3- 900818 801 0.3- 0.5-

(4599)* 1985 RZ2 = 1975 VV1 = 1977 DB2 = 1980 TV10
Discovered 1985 Sept. 5 by H. Debehogne at the European Southern Observatory.
Id. H. Oishi (MPC 11515), E. Goffin (ibid.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Oishi

M 327.41144		(1950.0)	P	Q
n 0.18305047	Peri.	255.49818	+0.99395965	-0.09397570
a 3.0720066	Node	109.86955	+0.10849122	+0.91927672
e 0.1690850	Incl.	3.45527	-0.01654873	+0.38222883

P 5.38 H 12.7 G 0.25
Residuals in seconds of arc
751102 095 1.0+ 0.6+ 850910 809 0.6- 0.3- 850919 809 0.4+ 0.6+
770218 381 0.3+ 1.8- 850912 809 1.1- 0.4- 850919 809 0.6+ 0.7+
770218 381 1.0- 0.8+ 850912 809 0.9- 0.5- 850919 809 0.9+ 1.1+
770219 381 0.1+ 0.5+ 850912 809 0.9- 0.7- 850919 809 0.9+ 1.1+
770219 381 0.4- 0.6+ 850914 809 0.2- 0.1- 850919 809 1.1+ 1.1+
801008 095 0.2+ 0.5+ 850914 809 0.2+ 0.1- 850920 809 1.4- 0.8-
850905 809 (2.1- 2.6-) 850914 809 0.3+ 0.2- 850920 809 1.5- 0.7-
850905 809 (2.0- 2.2-) 850915 809 0.7+ 0.6+ 850920 809 1.2- 0.7-
850905 809 (1.9- 2.3-) 850915 809 0.8+ 0.4+ 850921 809 0.1- 0.4-
850907 809 0.6- 0.8- 850915 809 0.7+ 0.3+ 850921 809 0.3+ 0.3-
850907 809 0.1- 0.9- 850917 809 0.4+ 0.1+ 850921 809 0.4+ 0.5-
850907 809 0.1+ 1.1- 850917 809 0.6+ 0.2+ 900427 413 1.4+ 0.4+
850910 809 0.8- 0.1+ 850917 809 0.3+ 0.3+ 900430 413 1.2+ 0.7+
850910 809 0.8- 0.0 850919 809 0.2+ 0.6+ 900430 413 0.6- 0.3+

(4600)* 1985 RE4 = 1973 FK1
Discovered 1985 Sept. 10 by H. Debehogne at the European Southern Observatory.
Id. S. Nakano (MPC 12200)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M 8.81659		(1950.0)	P	Q
n 0.18849015	Peri.	188.09652	+0.83163290	+0.54008439
a 3.0126148	Node	138.35508	-0.49796017	+0.82824961
e 0.0951431	Incl.	11.21233	-0.24580968	+0.14937016

P 5.23 H 11.7 G 0.25
Residuals in seconds of arc
730327 095 1.0+ 1.8+ 850914 809 0.3- 0.3- 890409 801 0.9+ 1.8+
730402 095 0.5- 2.1+ 850914 809 0.2- 0.3- 890505 801 0.7- 0.3+
850813 095 1.5- 1.1+ 850916 809 0.5- 0.2+ 890507 046 0.9- 0.3-
850815 095 (1.1- 4.3-) 850916 809 0.2- 0.1+ 890507 046 0.9+ 1.4-
850817 095 (1.4- 5.9-) 850916 809 0.2- 0.0 890508 046 0.1+ 0.4-
850819 095 0.1- 1.7- 850918 809 0.8- 0.1- 890508 046 0.5+ 0.8-
850824 095 0.2+ 1.1+ 850918 809 0.9- 0.2- 900720 801 0.4+ 0.2+
850910 809 1.0+ 0.4+ 850918 809 0.5- 0.4- 900720 801 0.4- 0.3-
850910 809 1.2+ 0.2+ 850919 095 (3.5- 1.1-) 900727 675 0.4- 1.6-
850910 809 1.5+ 0.2+ 850920 809 0.1- 0.2- 900727 675 0.3- 1.7-
850911 809 0.3+ 1.4+ 850920 809 0.1- 0.2- 900816 801 0.1- 0.1-
850911 809 0.6+ 1.3+ 850920 809 0.1- 0.2- 900816 801 0.6- 0.3+
850911 809 0.5+ 1.4+ 850920 095 (2.9- 0.3+) 900817 801 0.0 0.1+
850911 095 1.1- 1.1+ 850922 809 0.8+ 0.3+ 900817 801 0.0 0.0
850914 809 0.3- 0.0 850922 809 0.8+ 0.2+

(4601)* 1986 LB = 1933 FR = 1977 FP1 = 1987 QC12 = 1987 RP6 = 1990 FB
Discovered 1986 June 3 by M. Rudnyk at Palomar.
Id. H. Kaneda (MPC 16426)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	59.46308	(1950.0)	P	Q
n	0.22512419	Peri. 359.48383	-0.99842067	-0.05511640
a	2.6762167	Node 177.28400	+0.05232928	-0.98284208
e	0.0974350	Incl. 13.27204	+0.02044028	-0.17602170
P	4.38	H 12.6	G 0.25	

Residuals in seconds of arc

330322	024	(3.2-	5.4+)	860604	675	1.4-	1.1+	900320	095	(5.9-	4.0-)
330323	024	(1.8+	6.8+)	860608	675	1.0+	0.3+	900320	095	(3.9-	5.2-)
330327	024	0.2+	1.2+	860608	675	1.9+	0.2+	900321	400	1.2+	0.4+
770326	095	0.2-	2.8-	870827	095	0.2+	1.2-	900321	400	1.0+	1.1-
860603	675	0.9-	0.5-	870902	095	0.3-	1.7+	900330	095	0.0	1.1+
860603	675	0.8-	1.3+	900318	400	0.3-	1.6+	900330	095	0.6-	0.5-
860604	675	0.2+	1.5-	900318	400	1.1-	0.1-				

(4602)* 1986 UD3 = 1961 VU = 1978 YA2 = 1982 VY10
Discovered 1986 Oct. 28 at Caussols.
Id. S. Nakano (MPC 14949)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	312.78691	(1950.0)	P	Q
n	0.23239364	Peri. 162.80491	+0.76414325	-0.61963472
a	2.6201122	Node 236.85165	+0.56374813	+0.77659024
e	0.1641635	Incl. 12.36369	+0.31348546	+0.11384384
P	4.24	H 12.5	G 0.25	

Residuals in seconds of arc

611111	760	1.0+	0.8+	861003	095	0.7+	0.6+	900720	801	0.3+	0.3+
611111	760	0.9-	0.1-	861006	095	(0.4+	3.4+)	900720	801	0.5+	0.4+
781229	808	1.1-	1.5+	861028	010	(3.4-	0.0)	900817	801	0.3-	0.3+
781229	808	0.5-	0.6-	861028	010	1.6-	1.5-	900817	801	0.3-	0.3+
781231	808	0.5+	0.9+	861028	010	1.1-	0.5-	900818	801	0.6-	0.1+
781231	808	0.9+	0.9+	900719	801	0.6+	0.5+	900818	801	0.4-	0.2+
821114	095	1.8+	2.1-	900719	801	0.4+	0.6+				

(4603)* 1986 WM3 = 1930 QL = 1943 SC = 1977 QK = 1980 BX1
Discovered 1986 Nov. 25 at Caussols.
Id. S. Nakano (MPC 14791)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	73.25538	(1950.0)	P	Q
n	0.23093431	Peri. 288.68885	-0.03935277	+0.99608943
a	2.6311387	Node 338.58472	-0.81552961	-0.07776017
e	0.2363338	Incl. 12.51206	-0.57737580	+0.04194295
P	4.27	H 12.0	G 0.25	

Residuals in seconds of arc

300821	078	0.8+	3.0-	861008	095	0.3+	1.1-	900731	033	0.4-	0.4+
300821	078	0.4-	3.2-	861125	010	2.1-	0.6-	900819	801	0.1-	0.2+
430923	020	2.7+	3.0-	861125	010	2.5-	1.3-	900819	801	0.3-	0.2+
431003	020	2.8+	3.4+	890312	808	(3.0-	10.0+)	900820	801	0.0	0.6+
770818	095	0.0	2.3+	890312	808	2.7-	1.9-	900820	801	0.2+	0.4+
770908	095	0.5-	0.0	900727	033	0.4-	1.2+	900828	657	(2.4-	4.5-)
800123	095	1.3+	2.3-	900728	033	0.2-	0.7+	900828	657	(0.4-	3.2-)
861002	095	0.6+	1.8-	900729	033	0.4-	0.8+				

(4604)* 1987 SK = 1971 TC1 = 1979 BC2 = 1984 UY
Discovered 1987 Sept. 18 by K. Suzuki and T. Urata at Toyota.
Id. T. Kobayashi (MPC 12456)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
M 358.33309 (1950.0) P Q
n 0.30729866 Peri. 354.66585 +0.99501592 +0.09971604
a 2.1748481 Node 359.61121 -0.09055012 +0.90285078
e 0.1288851 Incl. 1.40845 -0.04176114 +0.41823100
P 3.21 H 14.1 G 0.25
Residuals in seconds of arc

711011	095	1.6+	2.8+	870926	688	(3.1+	1.3+)	871028	881	0.8-	0.6-
711021	095	2.3-	1.0-	870928	881	0.8-	0.9+	871028	881	0.8+	1.3+
790124	095	0.7-	1.5-	870928	881	1.2-	0.9+	900727	675	0.1-	0.8-
841026	688	0.4+	1.3-	871002	881	0.7-	0.4-	900727	675	1.9-	0.5-
841026	688	1.2+	2.9-	871002	881	0.1-	0.6-	900730	675	0.2+	0.2-
870903	095	0.8-	2.1-	871013	881	0.2+	0.1-	900730	675	0.1+	0.9-
870918	881	0.8+	0.3-	871013	881	1.3-	0.2-	900816	801	1.0+	0.4-
870918	881	0.6-	0.6-	871018	881	1.9+	0.0	900816	801	0.1+	0.2-
870921	071	(6.2-	0.6-)	871018	881	0.8-	0.6+	900822	801	1.0+	0.2+
870921	071	(6.3-	0.2+)	871022	881	0.5-	1.8+	900822	801	1.1+	0.2+
870923	095	0.7+	2.4-	871022	881	0.6-	2.0+				
870926	688	1.8+	1.6+	871023	095	(3.0+	1.4-)				

(4605)* 1987 SV17 = 1932 BC = 1937 RT = 1977 ST = 1984 YW5
Discovered 1987 Sept. 18 by L. I. Chernykh at the Crimean Astrophysical Observatory.
Id. B. G. Marsden (MPC 15250)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Marsden
M 329.35466 (1950.0) P Q
n 0.29632356 Peri. 98.72109 +0.92239016 -0.38455163
a 2.2282227 Node 283.90120 +0.33804419 +0.84912822
e 0.1533726 Incl. 2.14206 +0.18687566 +0.36207916
P 3.33 H 13.4 G 0.25
Residuals in seconds of arc

320127	024	0.2-	0.1-	870918	095	0.2+	1.1-	900722	801	0.4+	0.3-
370913	020	(16.5-	44.3-)X	870920	095	0.3-	0.1+	900817	801	0.2-	0.1+
770918	095	0.7-	1.8+	870926	095	0.2+	1.7-	900817	801	0.1-	0.1-
770921	095	0.3+	0.7+	871002	095	0.0	0.2+	900822	801	0.2-	0.2-
841229	095	0.2+	0.2-	900722	801	0.5+	0.1-	900822	801	0.2-	0.0

(4606)* 1987 UM1 = 1972 GA1 = 1977 TJ7 = 1977 VF2 = 1982 FH4
Discovered 1987 Oct. 27 by T. Seki at Geisei.
Id. S. Nakano (MPC 15415)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
M 224.48784 (1950.0) P Q
n 0.29166153 Peri. 251.63771 -0.67434050 -0.73733065
a 2.2519044 Node 240.83314 +0.69361646 -0.61385911
e 0.1014425 Incl. 2.63242 +0.25330040 -0.28199379
P 3.38 H 12.8 G 0.25
Residuals in seconds of arc

720412	095	0.2+	1.5-	870918	095	0.2+	2.8-	900817	801	0.1+	0.0
771010	095	0.9-	1.2+	871002	095	1.7+	0.5-	900818	372	0.9-	0.8-
771106	095	0.5-	0.2-	871027	372	0.6-	1.0+	900818	372	0.0	0.6+
820316	323	1.3+	0.4-	871027	372	(3.8-	1.7-)	900819	801	0.6+	0.1-
820316	323	1.5+	0.5+	871028	372	1.6+	0.3-	900819	801	0.6+	0.5+
820317	323	2.5-	0.8-	900730	372	1.9-	0.3-	900826	372	0.6+	0.7-
820317	323	1.2-	0.1+	900817	801	0.0	0.1+				

(4607)* 1987 WR = 1951 CK1 = 1975 EO4
Discovered 1987 Nov. 25 by K. Endate and K. Watanabe at Kitami.
Id. S. Nakano (MPC 12944)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
M 268.79634 (1950.0) P Q
n 0.28939535 Peri. 221.11942 -0.36094358 -0.93185641
a 2.2636452 Node 250.06804 +0.86553920 -0.31998970
e 0.0191719 Incl. 2.25096 +0.34721987 -0.17102696
P 3.41 H 12.3 G 0.25
Residuals in seconds of arc (or two decimals in units of degrees)

510207	119	(0.03-	0.00+)X	871218	400	0.3+	0.5+	890505	400	0.0	1.0-
750315	095	1.7-	4.0-	871223	400	1.4+	0.3-	890505	400	1.2+	0.4+
871125	400	0.1-	2.1+	871223	400	0.5+	0.4-	890505	400	1.1+	1.3+
871125	400	0.0	2.1+	871223	400	(8.3+	3.4+)	890525	400	(0.6+	3.6+)
871209	400	1.4-	0.7-	880110	400	0.2-	0.9+	890525	400	(2.2-	4.3+)
871209	400	0.8-	0.7-	880110	400	0.3+	0.3+	890526	400	1.0+	1.6+
871209	400	1.1-	0.2+	880111	400	0.1-	1.2+	890526	400	(3.2+	0.6+)
871210	400	2.0-	0.4-	880112	400	1.1-	0.0	890529	293	(0.0	4.6-)
871210	400	0.0	0.2-	880112	400	0.6-	0.2+	890601	400	1.6-	0.4-
871210	400	0.1+	0.8-	880112	400	0.7-	0.4-	890601	400	0.7+	0.3+
871214	400	0.0	0.7+	890412	400	(2.5+	6.3+)	900824	675	0.4-	2.0-
871214	400	0.9+	0.1+	890412	400	0.3+	1.8+	900824	675	0.6-	2.2-
871214	400	1.8+	0.3+	890503	400	0.9-	0.7+	900916	400	0.1+	0.4-
871218	400	1.0+	0.5-	890503	400	1.6-	1.3-	900916	400	1.9+	2.1+
871218	400	1.1+	0.1+	890505	801	1.1+	1.6+	900916	400	0.4-	0.2+

(4608)* 1988 BW3 = 1954 SG = 1978 GO4 = 1983 TD

Discovered 1988 Jan. 19 by H. Debehogne at the European Southern Observatory.

Id. C. M. Bardwell (MPC 13468)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell
M 322.23649 (1950.0) P Q
n 0.27156702 Peri. 202.41799 +0.70558429 -0.70684302
a 2.3616636 Node 202.80596 +0.66820231 +0.68726198
e 0.2189039 Incl. 7.44685 +0.23591626 +0.16746320
P 3.63 H 12.9 G 0.25
Residuals in seconds of arc

540922	760	0.8-	0.1-	880120	809	0.0	0.2-	880129	809	0.4-	0.2-
540922	760	1.0-	1.1+	880120	809	0.1+	0.1-	880130	809	0.5-	0.6-
541022	760	0.1-	1.4+	880120	809	0.2-	0.1-	900719	657	0.6-	0.4+
541022	760	1.1+	0.7+	880122	809	0.5-	0.4+	900720	801	0.1+	0.5+
780411	095	0.1-	1.5+	880122	809	0.0	0.5+	900720	801	0.2+	0.4+
830917	095	0.1+	1.6-	880124	809	0.1+	0.0	900720	657	0.1+	2.7-
831011	882	(65.3+	11.1+)	880124	809	0.1-	0.1+	900720	657	1.9-	2.0-
831011	882	0.6-	1.5+	880125	809	0.4+	0.2-	900817	801	0.5+	0.2+
880119	809	0.4-	0.4-	880125	809	0.1+	0.3-	900817	801	0.9+	0.3+
880119	809	0.1+	0.3-	880127	809	0.5+	0.2-	900819	801	0.9+	0.3+
880119	809	0.4+	0.3-	880128	809	0.0	0.0	900819	801	0.6+	0.3+

(4609)* 1988 CT3 = 1969 VZ1 = 1978 JQ1 = 1984 NB = 1990 OE3

Discovered 1988 Feb. 13 by E. W. Elst at the European Southern Observatory.
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
M 30.63931 (1950.0) P Q
n 0.18016376 Peri. 115.68131 +0.55807845 +0.82908618
a 3.1047342 Node 188.49083 -0.81977928 +0.54451220
e 0.1171493 Incl. 13.36310 -0.12849269 +0.12697464
P 5.47 H 11.6 G 0.25
Residuals in seconds of arc

691115	095	0.7+	2.4-	880213	809	0.5+	0.5+	880216	809	0.5+	2.2-
780506	095	1.5-	1.7-	880215	809	2.5-	1.9-	880216	809	0.1-	2.7-
840702	095	0.8+	1.3+	880216	809	0.2+	1.9-	880221	809	0.4-	0.0

880221 809 0.2- 0.0 900726 675 0.1+ 2.2- 900729 675 0.2- 0.4-
880221 809 0.2- 0.1- 900726 675 0.6+ 1.7- 900730 675 0.1- 1.9-
880223 809 0.9+ 0.2- 900728 675 0.1+ 1.5- 900730 675 0.4+ 1.5-
880223 809 0.1+ 0.3- 900728 675 0.6+ 1.7-
880223 809 0.0 1.0- 900729 675 0.4- 0.7+

(4610)* 1989 FO = 1949 OM = 1979 QQ7 = 1981 AX1 = 1987 WX = 1987 WN4
Discovered 1989 Mar. 26 by A. Mrkos at Klet.
Id. S. Nakano (MPC 14625)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	20.31235	(1950.0)	P	Q
n	0.26478120	Peri. 204.43451	+0.77446245	+0.63012168
a	2.4018430	Node 116.38789	-0.56958170	+0.73317113
e	0.0373991	Incl. 3.59471	-0.27529001	+0.25574745
P	3.72	H 13.1	G 0.25	

Residuals in seconds of arc (or two decimals in units of degrees)
490728 024 0.1- 0.9+ 871126 046 1.9+ 0.3- 900727 675 (3.8+ 1.8-)
490730 024(0.08+ 0.06-) 890326 046 0.8- 0.7- 900727 675 1.2- 1.2-
790820 095 0.1- 0.9- 890326 046 0.4+ 1.3- 900730 675 0.9+ 0.1+
810108 381 1.0+ 0.9- 890327 046 0.7+ 2.1- 900730 675 0.8+ 0.9-
810108 381 1.2- 0.8- 890327 046 2.5- 0.5- 900730 675 0.5+ 2.2-
871023 095 (0.4- 6.8-) 890328 046 0.6- 0.7- 900730 675 0.1- 2.6-
871118 372 (1.8- 6.6-) 890328 046 0.8+ 1.3- 900816 801 1.3+ 0.0
871118 372 0.9- 3.7- 890330 046 (3.2- 0.2-)
871126 046 (5.0- 2.5-) 890330 046 0.7- 0.1+

(4611)* 1989 GR6 = 1965 SL = 1975 AC1 = 1975 BD = 1980 DN1 = 1980 FW11
Discovered 1989 Apr. 5 by M. Geffert at the European Southern Observatory.
Id. B. G. Marsden (MPC 14957; d, MPC 9064)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Marsden

M	325.69200	(1950.0)	P	Q
n	0.23301295	Peri. 272.59424	+0.85072522	-0.48018908
a	2.6154676	Node 116.17989	+0.52464730	+0.80039351
e	0.1926267	Incl. 13.77880	-0.03180900	+0.35887139
P	4.23	H 12.2	G 0.25	

Residuals in seconds of arc
650927 822 0.1- 1.0- 800316 095 (1.6+ 6.7-) 900722 801 0.0 0.4+
650927 822 0.3+ 0.6+ 890405 809 0.0 0.1+ 900722 801 0.2+ 0.5+
750110 330 0.8+ 1.4+ 890407 809 1.6+ 0.6- 900816 801 0.1+ 0.4-
750116 330 1.7+ 0.5+ 890411 809 0.9+ 0.2- 900816 801 0.0 0.2-
750117 095 2.0- 1.3- 890413 809 0.3- 0.1+ 900817 801 0.1+ 0.6-
800221 033 1.2- 0.1- 900720 801 0.1+ 0.4+ 900817 801 1.0- 0.1+
800222 033 1.4- 0.0 900720 801 0.0 0.3+

(4612)* 1989 JG = 1989 JJ = 1972 BU = 1979 YA8 = 1980 BD4 = 1983 XT1
Discovered 1989 May 2 by E. F. Helin at Palomar.
Id. S. Nakano (MPC 14796)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M	204.02725	(1950.0)	P	Q
n	0.24137231	Peri. 40.06450	-0.81392548	-0.55815605
a	2.5547266	Node 105.28715	+0.48098896	-0.80302116
e	0.1435392	Incl. 9.62032	+0.32584494	-0.20885125
P	4.08	H 12.4	G 0.25	

Residuals in seconds of arc
720120 033 2.0- 2.1+ 831205 561 0.4- 0.5- 890502 675 0.4- 1.7-
720120 033 1.4+ 0.8- 831205 561 0.5- 1.0- 890502 675 0.6+ 1.6-
791223 095 2.7+ 2.2+ 831205 561 0.5- 0.8- 890504 675 0.3+ 0.2+
800122 095 (1.6+ 6.0-) 831205 561 0.4- 0.8- 890504 675 0.9- 0.5+

890505 400 0.8- 1.2+
890505 400 0.4+ 1.4+
890508 400 (4.3+ 1.2-)
890508 400 1.8- 2.4-
890508 400 0.5+ 0.1+
890525 400 (0.1+ 3.8+)
890525 400 1.4- 2.0+
890525 400 1.0- 1.7+
890525 400 0.7- 0.9+
890601 400 (0.0 3.5+)
890601 400 (1.4+ 3.0+)
890601 400 0.4- 2.3+
890604 675 0.9+ 0.8-
890604 675 1.3+ 2.1-
890606 675 1.1+ 0.4-
890606 675 2.4+ 1.8-
900729 675 0.9- 0.6-
900729 675 1.3- 1.4-
900730 675 0.4- 0.5-
900730 675 0.6- 0.3-
900818 675 2.5+ 0.3+
900818 675 0.2+ 1.4+
900820 675 0.1- 0.9+
900820 675 0.2+ 1.3+

(4613)* 1990 OM = A912 WA = 1929 RA1 = 1942 PJ = 1951 SL = 1957 BN
= 1977 QM1 = 1977 TS1 = 1983 DD = 1984 HP = 1986 WT7
= 1988 GX

Discovered 1990 July 22 by K. Watanabe at JCPM Sapporo Station.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Urata

M	342.78358		(1950.0)	P	Q
n	0.22646503	Peri.	253.77843	+0.77568061	-0.62760011
a	2.6656428	Node	145.01507	+0.61428797	+0.72655051
e	0.3004422	Incl.	6.67199	+0.14480982	+0.27971854
P	4.35	H	11.9	G 0.25	

Residuals in seconds of arc

121117 799(62.0+ 10.5+)Y
121201 799(12.2- 18.7+)X
121204 799(30.4+ 4.3-)X
290906 078 0.5- 0.1+
290906 078 1.0- 1.2+
420806 078 0.3- 0.7-
510930 760 1.4+ 1.0-
510930 760 0.7+ 1.2-
570130 024 1.0+ 2.5-
770819 095 0.8- 1.0+
770820 095 0.2- 1.2+
770821 095 (3.8- 3.3-)
770823 095 (4.4- 1.4+)
771006 095 (7.2- 4.6-)
830218 046 2.2- 1.2-
830218 046 0.2+ 1.5-
840419 046 1.5- 2.2-
840419 046 1.6- 2.6-
861130 675 1.4- 0.1-
861130 675 0.4- 1.0-
861203 675 0.1- 0.2+
861203 675 0.7+ 0.4+
880409 054 1.0+ 0.1-
880409 054 0.3- 0.5-
880415 054 1.1+ 0.9-
900722 392 2.1+ 0.9+
900722 392 1.3+ 1.0+
900722 392 (0.1- 3.5+)
900723 392 0.7- 0.1-
900723 392 0.8- 0.3-
900823 675 0.6- 0.8-
900823 675 0.1- 1.8-
900825 675 0.1+ 1.6-
900825 675 0.5- 0.8-
900825 881 (4.5+ 5.7+)
900825 881 (5.2+ 4.6+)
900826 675 0.2- 1.4-
900826 675 0.8- 1.3-
900826 881 0.8+ 0.5-
900826 881 0.1- 0.2+
900827 675 (0.2- 3.2-)
900827 675 0.2- 0.7-
900827 392 2.1+ 1.1+
900830 400 0.4+ 0.2-
900830 400 0.9+ 0.9-

(4614)* 1990 QN = 1936 QJ = 1970 SW = 1976 GQ7 = 1980 RK2 = 1983 LP

Discovered 1990 Aug. 21 by Y. Mizuno and T. Furuta at Kani.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Ichikawa

M	25.96131		(1950.0)	P	Q
n	0.29217722	Peri.	142.39405	+0.78512076	+0.61934194
a	2.2492539	Node	179.33550	-0.58660169	+0.74411819
e	0.2129997	Incl.	4.80335	-0.19870542	+0.25040703
P	3.37	H	13.0	G 0.25	

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

360815 094(0.03- 0.01+)X
360820 094(0.03- 0.00+)X
360824 012 2.3- 0.6-
360826 012 2.0+ 3.0+
700930 095 0.7- 1.5+
760405 095 2.1+ 0.6+
800907 095 0.6- 0.2-
800908 095 0.2- 1.4-
830607 046 3.1- 1.0+
830607 046 1.7- 1.1-
830608 046 1.1+ 0.6+
830608 046 1.2+ 0.4-
900821 403 1.0+ 0.7-
900821 403 1.0+ 0.3-
900824 403 1.6- 0.1-
900824 403 0.0 0.1+
900826 403 0.9- 0.7-
900826 403 2.0+ 0.3-
900826 403 0.9+ 0.9+

1948 AA = 1989 YW6
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nagata
M 0.45899 (1950.0) P Q
n 0.28215972 Peri. 292.09802 -0.82222319 +0.38857967
a 2.3021805 Node 272.90736 -0.23037512 -0.89536261
e 0.1639917 Incl. 24.60842 -0.52045780 -0.21755837
P 3.49 H 14.6 G 0.25
Residuals in seconds of arc (or two decimals in units of degrees)

480114 672 3.7+ 0.3-	480212 672 0.8+ 1.2+	891226 033 0.0 0.8+
480115 672(0.14+ 0.00+)	480213 672 0.5- 0.9-	891226 033 0.4+ 0.9-
480116 672 3.5- 1.6+	480311 672(23.7+ 9.0-)	
480120 672 0.4- 1.7-	891225 033 0.4- 0.0	

1949 QQ1 = 1980 RE4 = 1983 EL1
Id. A. Lowe (k, MPC 13480), C. M. Bardwell
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Bardwell
M 294.68672 (1950.0) P Q
n 0.19011728 Peri. 84.83290 +0.81576872 -0.56691106
a 2.9954071 Node 309.64850 +0.45392409 +0.75033191
e 0.0979629 Incl. 8.55952 +0.35843314 +0.34002041
P 5.18 H 12.0 G 0.25
Residuals in seconds of arc

490824 760 1.4- 0.7-	800909 095 1.2- 1.4+	900816 801 0.0 0.1-
490824 760 1.5+ 0.6+	830314 095 1.0+ 1.8+	900817 801 0.3+ 0.4-
490921 760 (7.8+ 0.4+)	900722 801 0.2- 0.2+	900817 801 0.5+ 0.3-
490921 760(10.0+ 1.0+)	900722 801 0.0 0.0	
800907 095 0.4- 0.9+	900816 801 0.2- 0.4-	

1949 SA1 = 1949 SD = 1949 TJ = 1949 UG1 = 1959 NK = 1966 QO = 1973 SW3 = 1990 RA
Id. O. Kippes (d, NAZ 12,23), W. Strobel (d, MPC 782), S. Nakano, E. Bowell
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
M 12.55458 (1950.0) P Q
n 0.28758128 Peri. 234.24218 +0.97736431 +0.20802587
a 2.2731546 Node 113.72337 -0.17796338 +0.90686714
e 0.2461827 Incl. 2.41183 -0.11440300 +0.36649314
P 3.43 H 13.6 G 0.25
Residuals in seconds of arc (or two decimals in units of degrees)

490928 020(0.24- 0.04+)X	660822 095 0.4+ 0.9+	900827 675 0.9+ 2.4-
490929 020 0.6+ 2.7-	660918 095 (6.2+ 1.9-)	900827 675 0.9+ 1.4-
491015 020(10.4+ 1.4+)	730925 095 (2.9- 6.3-)	900829 675 0.1- 0.9+
491017 094 (8.2+ 19.0+)X	730927 095 0.6+ 0.4+	900829 675 1.1- 1.5+
491023 020(0.08+ 0.01+)X	900822 675 0.2- 0.9+	900913 392 0.5- 0.6-
491026 020 0.6- 0.8+	900822 675 0.3- 0.9+	900913 392 1.5+ 0.2+
590710 760 0.3- 0.5-	900826 403 2.4- 0.1- Y	900915 392 0.6+ 0.0
590710 760 0.4+ 1.2-	900826 403 0.4- 1.5+ Y	

1974 QX1 = 1931 RT = 1942 VR = 1983 CH5 = 1985 VA = 1989 YF3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
M 167.02253 (1950.0) P Q
n 0.27537610 Peri. 310.08040 +0.97257897 -0.23123657
a 2.3398349 Node 63.30264 +0.22095593 +0.88528153
e 0.1995458 Incl. 1.59684 +0.07258529 +0.40349258
P 3.58 H 14.4 G 0.25
Residuals in seconds of arc (or two decimals in units of degrees)

310915 024(0.03- 0.02-)X	421105 062 2.3- 0.5+	740911 095 1.7+ 5.2-
421105 062 1.7+ 1.2+	740824 095 2.4- 1.7+	740914 095 0.5+ 1.6+

740914 095 1.1+ 0.8- 851112 881 0.4+ 1.9+ Y 891231 413 2.2- 1.3-
830214 381 1.8+ 1.6- 891230 413 0.4- 0.7- 891231 413 0.1+ 0.1+
851112 881 0.1+ 1.1- Y 891230 413 0.7- 0.4+

1974 SJ3 = 1979 SY10 = 1979 VA1 = 1986 GP = 1988 RE14 = 1990 BG2
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
M 48.56612 (1950.0) P Q
n 0.21504009 Peri. 141.06680 -0.82175917 -0.56939401
a 2.7592418 Node 4.40620 +0.42205124 -0.63459583
e 0.0836157 Incl. 16.96155 +0.38286371 -0.52256922
P 4.58 H 12.2 G 0.25
Residuals in seconds of arc
740921 095 3.1+ 2.2- 791114 095 3.3- 0.6- 900121 675 0.5+ 0.2-
740923 095 4.7+ 2.2- 860409 688 1.7- 0.5- 900121 675 0.7- 0.2-
741009 095 0.6+ 1.1- 860409 688 0.7- 0.8- 900124 675 0.1- 1.2-
790929 095 1.0- 0.1+ 880915 095 2.2- 2.6+ 900124 675 0.1- 2.7-

1976 GH2 = 1982 KL2 = 1983 QN1 = 1989 UH8
Id. A. Lowe (k), G. V. Williams
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams
M 126.67610 (1950.0) P Q
n 0.17654239 Peri. 141.30210 +0.61720638 +0.78678361
a 3.1470480 Node 166.80753 -0.72746950 +0.57320527
e 0.1330790 Incl. 1.32465 -0.29974056 +0.22892635
P 5.58 H 12.0 G 0.25
Residuals in seconds of arc
760401 095 0.3+ 0.1- 820517 675 0.9+ 1.4- 891025 095 0.1- 0.9+
760404 095 0.7- 1.2- 820518 675 0.7+ 1.1+ 891025 095 0.1- 0.5-
820516 675 2.0- 0.1+ 830816 095 0.2+ 0.6-
820516 675 0.6+ 1.0+ 891021 095 0.2+ 0.6-

1977 EL5 = 1977 DD = 1990 QZ
Id. K. Hurukawa (d, JAM 1392), B. G. Marsden
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Marsden
M 59.86583 (1950.0) P Q
n 0.17620251 Peri. 107.17253 +0.26262048 +0.96480915
a 3.1511000 Node 177.91300 -0.96402358 +0.26293959
e 0.1190298 Incl. 21.22309 -0.04109762 -0.00246544
P 5.59 H 13.0 G 0.25
Residuals in seconds of arc
770218 801 0.8- 1.4+ 770314 381 0.0 0.9- 900817 511 0.5+ 0.2+
770219 801 2.5+ 1.7- 770315 381 0.4- 0.8- 900821 511 1.0- 1.2-
770312 381 1.3- 1.5+ 770315 381 0.7- 0.3- 900821 511 0.6+ 0.3+
770314 381 0.8+ 0.7+ 900817 511 0.5+ 0.8+ 900828 511 0.6- 0.3-

1979 WE2 = 1973 SO6 = 1985 VJ3
Id. A. Lowe (k, MPC 12438), C. M. Bardwell (ibid.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
M 346.93182 (1950.0) P Q
n 0.17214321 Peri. 205.44014 +0.96329575 -0.26839275
a 3.2004382 Node 170.12433 +0.25113667 +0.89423657
e 0.1429193 Incl. 1.72447 +0.09482447 +0.35819867
P 5.73 H 12.3 G 0.25
Residuals in seconds of arc
730919 675 0.0 0.5- 730925 675 (2.4- 2.4-) 730930 675 1.4- 0.2+
730919 675 0.1- 1.1- 730925 675 0.5+ 0.7+ 730930 675 0.9- 0.0
730920 675 0.9- 1.3+ 730928 095 (6.5+ 1.9+) 731004 675 0.6- 1.3+
730924 675 0.1+ 0.2- 730929 675 0.7+ 0.7+ 731004 675 1.6- 1.1+
730924 675 0.3- 0.7+ 730929 675 0.6- 1.0+ 731005 675 1.3+ 0.6-

731005 675 1.8+ 0.2- 851120 095 0.1- 0.6- 900823 675 0.5- 1.4-
791116 095 2.1- 0.2- 900822 675 0.5+ 1.4+ 900827 675 0.2+ 2.2-
791117 095 2.4+ 0.4- 900822 675 0.9+ 0.4- 900827 675 0.2+ 0.8-
851110 095 0.3+ 0.6- 900823 675 0.1+ 0.1-

1979 WX3 = 1975 VQ3
Id. T. Furuta (JAM 1873)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
M 345.69849 (1950.0) P Q
n 0.25942678 Peri. 266.92526 +0.85625704 -0.51579255
a 2.4347788 Node 124.12349 +0.48631120 +0.78669978
e 0.1759976 Incl. 1.93575 +0.17414161 +0.33920718
P 3.80 H 13.4 G 0.25
Residuals in seconds of arc
751102 095 0.9- 3.5- 791214 095 1.8+ 0.6- 900829 675 1.2+ 2.4+
751107 095 2.5+ 0.9- 791218 095 1.0- 2.0+
791117 095 1.4- 2.6+ 900829 675 2.3- 0.3+

1981 SM = 1976 JT4 = 1990 BH3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Williams
M 110.25514 (1950.0) P Q
n 0.25950228 Peri. 109.63477 +0.64416445 -0.76323543
a 2.4343114 Node 300.15904 +0.67816349 +0.60027232
e 0.1324504 Incl. 3.33093 +0.35376043 +0.23904982
P 3.80 H 13.5 G 0.25
Residuals in seconds of arc
760503 809 0.1+ 0.4+ 811006 046 0.4- 0.6- 811025 046 0.7- 1.3-
810922 046 1.9- 2.7+ 811006 046 0.1- 1.4- 900124 071 0.6- 0.1+
810922 046 (0.9- 3.2+) 811007 046 1.5+ 0.1- 900124 071 0.2- 0.1-
810925 046 0.6- 2.3+ 811007 046 (2.9+ 9.7+) 900125 071 0.1+ 0.4+
810925 046 (3.8+ 4.5+) 811025 046 2.3+ 1.5- 900125 071 0.6+ 0.6+

1981 SD4 = 1973 YO3 = 1977 UA2 = 1979 FF1 = 1990 OS3
Id. S. Nakano, R. Nagata
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 102.57267 (1950.0) P Q
n 0.21227353 Peri. 325.73014 -0.56491580 +0.82326276
a 2.7831697 Node 269.81257 -0.74398212 -0.53740692
e 0.0139250 Incl. 3.19617 -0.35687637 -0.18284482
P 4.64 H 12.0 G 0.25
Residuals in seconds of arc
731225 095 0.1- 1.6- 810928 095 2.3- 0.6+ 900730 675 0.0 1.0-
771020 033 0.1+ 0.8- 811005 095 0.7- 0.0 900730 675 0.5+ 1.0-
790323 095 0.7- 1.0- 900727 675 1.8+ 1.7-
810925 095 2.0+ 1.1+ 900727 675 0.7- 0.1-

1981 WA1 = 1988 EO2 = 1990 OG3
Id. A. Lowe (k), G. V. Williams
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams
M 326.14005 (1950.0) P Q
n 0.19903897 Peri. 248.72536 +0.96077453 -0.27432642
a 2.9052085 Node 127.17402 +0.26959919 +0.88945298
e 0.0716237 Incl. 2.92861 +0.06502745 +0.36553853
P 4.95 H 12.0 G 0.25

Residuals in seconds of arc

811124	688	0.0	1.1-	880310	552	0.6+	0.5-	900730	675	0.2-	0.8+
811124	688	0.1-	0.5+	880310	552	0.6-	0.5+	900730	675	0.5+	0.4-
811202	688	(4.0+	1.5-)	900727	675	0.1+	0.1-				
811202	688	0.1+	0.6+	900727	675	0.3-	0.3-				

1982 DB

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams

M	303.63117		(1950.0)	P	Q
n	0.54215853	Peri.	157.94559	-0.37394256	-0.92728042
a	1.4895389	Node	314.00825	+0.84713170	-0.33366812
e	0.3604284	Incl.	1.42068	+0.37753787	-0.16975454
P	1.82	H	19.0	G 0.25	

Residuals in seconds of arc

810930	413	1.2+	1.2-	820323	801	2.1+	1.7+	820423	474	(3.1-	1.2-)
810930	413	(8.0+	0.4-)	820324	675	0.9-	0.9-	820423	474	1.9-	2.0-
820228	675	0.8+	0.6+	820324	675	0.2-	0.4+	820425	474	2.3-	0.1+
820228	675	0.7+	0.1+	820327	474	2.1-	1.6+	820425	474	2.2-	0.4-
820303	675	2.1+	0.5-	820327	474	0.5-	0.9+	820514	675	(4.7+	0.2+)
820304	675	1.9-	0.5-	820331	675	1.0+	0.1+	820516	675	2.2+	0.3-
820304	688	0.2+	2.3-	820331	675	0.7+	0.2-	900916	413	0.9-	0.2-
820304	688	(0.4-	4.3-)	820413	801	0.2+	0.7+	900917	413	0.8+	0.2+

1982 FJ = 1950 TA3 = 1979 VY = 1990 QR3

Id. E. Bowell (k), G. V. Williams

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams

M	164.63842		(1950.0)	P	Q
n	0.17242076	Peri.	207.84700	-0.89415039	+0.44772243
a	3.1970028	Node	358.70009	-0.34155386	-0.69108472
e	0.0613531	Incl.	16.12604	-0.28954453	-0.56740333
P	5.72	H	11.5	G 0.25	

Residuals in seconds of arc

501013	760	0.4+	0.4-	820414	688	0.3+	0.7-	900824	675	0.3+	0.0
791114	095	0.2-	0.2+	820414	688	2.2+	0.1-	900824	675	0.2-	0.1-
820321	688	2.8-	0.6+	820425	688	0.7+	0.1-				
820321	688	0.6-	0.2+	820425	688	0.1-	0.3-				

1982 OS = 1990 OT1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M	226.29476		(1950.0)	P	Q
n	0.26112569	Peri.	42.80727	-0.57949594	-0.80374209
a	2.4242116	Node	83.04863	+0.70614808	-0.57779567
e	0.1317587	Incl.	7.80739	+0.40686527	-0.14195356
P	3.77	H	13.5	G 0.25	

Residuals in seconds of arc

820722	474	0.1-	0.5-	820726	474	0.9+	0.0	900729	675	0.7-	1.4+
820722	474	0.4+	0.5-	820726	474	0.6+	0.9+	900730	675	0.8-	1.8-
820724	474	2.5-	0.4-	820726	474	0.7+	0.7+	900730	675	1.1+	0.7-
820724	474	0.0	0.2-	900729	675	0.5+	1.1+				

1982 RO1 = 1989 UU2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nagata

M	109.64231		(1950.0)	P	Q
n	0.28716367	Peri.	151.76668	+0.87170515	-0.48831102
a	2.2753579	Node	237.52068	+0.43992471	+0.81669887
e	0.1517765	Incl.	2.78702	+0.21586195	+0.30749846
P	3.43	H	14.2	G 0.25	

Residuals in seconds of arc

820914 046	2.5+	1.2-	820916 046	2.4-	1.0+	891023 095	1.2+	2.8-
820914 046	0.7-	1.0-	820926 095	1.2-	3.4+	891029 877	3.6-	1.2-
820915 046	0.7-	0.9-	891021 400	0.8+	0.3-	891029 877	0.7+	0.9+
820915 046	0.2+	1.6-	891021 400	0.1-	2.8+	891102 877	0.1+	3.0+
820916 046	2.0+	0.7+	891023 095	0.6-	2.3-	891102 877	1.9+	0.7-

1982 TX

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 331.10743		(1950.0)		P	Q
n 0.23785075	Peri.	193.52923	+0.62662673		-0.76105572
a 2.5798811	Node	218.06789	+0.73790913		+0.64864910
e 0.4296142	Incl.	15.78481	+0.25065725		-0.00696662
P 4.14	H	15.4	G	0.25	

Residuals in seconds of arc

821014 095	(7.3+	4.2-)	860712 691	0.5+	0.7-	861003 801	0.5-	0.7+
821020 095	0.4+	1.0-	860712 691	0.6+	1.0-	861030 801	(1.4+	2.1+)
821022 095	1.3-	0.8-	860731 691	1.0-	0.2-	861031 801	0.3+	0.8+
821024 095	1.9+	0.3+	860731 691	0.6-	0.0	861130 691	0.2-	0.5+
821107 095	0.5-	1.5-	860731 691	0.7-	0.2-	861130 691	0.3-	0.6+
821108 095	(1.1-	3.8+)	860804 801	0.2-	0.6-	861130 691	0.3-	0.5+
821112 095	(1.8-	3.3+)	860810 801	0.6+	0.4-	900729 688	0.4+	0.4+
821218 801	0.7-	0.8+	860901 801	0.8+	0.7+	900729 688	0.2+	0.4+
830114 801	1.2+	1.3+	860901 691	0.9-	1.0+	900828 688	0.2+	0.0
860712 691	0.6+	0.6-	860901 691	1.0-	0.7+	900828 688	0.3+	0.3+

1983 XX = 1979 SF12 = 1990 QX

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M 319.12967		(1950.0)		P	Q
n 0.26516583	Peri.	160.40352	+0.45198255		-0.86527019
a 2.3995246	Node	262.20688	+0.78639650		+0.50125188
e 0.1667128	Incl.	12.64212	+0.42106094		-0.00735214
P 3.72	H	13.5	G	0.25	

Residuals in seconds of arc

790919 033	0.0	0.9-	831225 046	0.4-	0.4-	900820 675	1.0+	0.5+
790919 033	0.4+	0.5-	831225 046	2.3+	0.8+	900820 675	0.0	0.3+
831205 046	0.3-	0.4-	831228 046	2.6+	0.1-	900821 675	0.1+	0.2+
831205 046	1.6-	1.4-	831228 046	2.7+	1.6+	900821 675	1.7-	0.6+
831208 046	2.5-	0.7+	840101 046	0.5-	1.1-			
831208 046	1.5-	0.7+	840101 046	0.5-	0.4+			

1985 PJ = 1978 FA = 1981 XR = 1986 XD4 = 1988 DT = 1990 QC4

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano

M 15.90669		(1950.0)		P	Q
n 0.20127449	Peri.	0.70598	+0.91279499		+0.40827024
a 2.8836567	Node	335.18877	-0.37482607		+0.82673085
e 0.0686115	Incl.	1.50038	-0.16220583		+0.38708076
P 4.90	H	12.5	G	0.25	

Residuals in seconds of arc

780316 801	0.3+	0.8+	850820 688	1.8-	1.5+	880216 809	0.1-	0.3-
811204 511	1.1+	1.9+	850820 688	0.1-	1.4+	900822 675	0.8+	1.0-
811204 511	1.4+	2.2+	850820 071	0.1+	1.1+	900822 675	0.8+	0.9-
850814 688	1.4-	0.3-	850822 688	0.4-	0.2+	900823 675	0.8+	0.8-
850814 688	0.5-	0.7-	850822 688	1.6-	0.5+	900823 675	1.1+	0.6-
850819 071	0.7-	0.1+	861204 010	(6.9-	1.5-)	900829 675	0.8+	0.7-
850819 071	0.2+	0.4+	861205 010	3.8-	2.9-	900829 675	1.1+	1.3-
850819 071	1.0+	1.0+	880216 809	0.4+	0.6-			

1985 QM5 = 1990 QO2
Id. H. E. Holt, G. V. Williams
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	21.53123	(1950.0)	P	Q
n	0.19564322	Peri. 186.67393	+0.91015175	+0.41363969
a	2.9387288	Node 148.86058	-0.37799096	+0.85182037
e	0.1460405	Incl. 2.54194	-0.16954829	+0.32140981
P	5.04	H 13.4	G 0.25	

Residuals in seconds of arc

850823	095	0.4-	0.3+	900822	675	0.8+	0.2-	900824	675	0.5+	0.8+
850915	095	0.5-	0.3-	900822	675	1.2+	0.3-	900828	675	0.0	0.3-
850920	095	0.8+	0.3+	900824	675	1.7-	0.5+	900828	675	0.7-	0.8-

1985 RD = 1990 OU3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nagata

M	19.19110	(1950.0)	P	Q
n	0.18642561	Peri. 316.98814	+0.72523917	+0.68849699
a	3.0348157	Node 359.50046	-0.62488244	+0.65810068
e	0.1819202	Incl. 1.39076	-0.28905032	+0.30475464
P	5.29	H 12.7	G 0.25	

Residuals in seconds of arc

850910	046	0.4+	0.0	850915	054	1.1+	0.6+	900727	675	0.0	0.3-
850910	046	0.7-	0.4-	850917	054	0.7+	0.5-	900730	675	0.4+	0.8+
850911	054	0.3+	0.7+	850918	688	0.1+	0.2+	900730	675	0.2-	0.7-
850914	688	1.1-	0.9+	850918	688	0.8-	0.7-				
850914	688	0.0	0.8-	900727	675	0.2-	0.1+				

1985 SW4 = 1948 AJ = 1990 OT2
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M	28.73949	(1950.0)	P	Q
n	0.17895671	Peri. 276.77849	+0.53962270	+0.84003841
a	3.1186856	Node 26.12198	-0.71332883	+0.49156358
e	0.1631824	Incl. 7.31526	-0.44717930	+0.22956636
P	5.51	H 13.0	G 0.25	

Residuals in seconds of arc

480108	020	0.0	0.0	900728	675	0.3+	2.6+	900730	675	0.6-	2.0-
850920	095	1.3+	1.4-	900728	675	1.7-	1.4+				
850922	095	1.4-	1.4+	900730	675	2.0+	2.0-				

1985 TJ1 = 1975 TB5 = 1990 QA5
Id. E. Bowell (k), G. V. Williams
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams

M	34.32971	(1950.0)	P	Q
n	0.18918922	Peri. 289.85731	+0.71015386	+0.69913175
a	3.0051890	Node 26.00096	-0.55400405	+0.62769719
e	0.0870669	Incl. 10.91958	-0.43446635	+0.34236098
P	5.21	H 12.5	G 0.25	

Residuals in seconds of arc

751014	095	0.4+	0.7-	850916	809	0.5-	0.3-	850919	809	0.5-	0.5+
850911	809	1.4-	1.0+	850917	809	0.4-	0.4-	850920	809	1.4+	0.9-
850911	809	1.4-	0.9+	850917	809	0.4-	0.4-	850920	809	1.6+	1.1-
850911	809	1.5-	0.7+	850917	809	0.2-	0.4-	850921	809	0.3+	0.1-
850915	809	0.3+	0.1+	850918	809	0.6-	0.3+	850921	809	0.4+	0.0
850915	809	0.5+	0.1+	850918	809	0.5-	0.3+	850921	809	0.4+	0.1+
850915	809	0.7+	0.2+	850918	809	0.1-	0.3+	850922	809	1.9+	0.8-
850916	809	0.8-	0.3-	850919	809	0.4-	0.8+	850922	809	2.2+	0.7-
850916	809	0.8-	0.3-	850919	809	0.6-	0.7+	851012	688	0.8+	0.0

851015 688 1.2- 1.4+ 900824 675 0.3+ 0.2+ 900829 675 0.1+ 0.5-
851015 688 0.5- 0.6- 900826 675 (4.2+ 0.8-)
900824 675 0.1+ 0.7- 900826 675 0.2+ 0.2-

1985 UW4 = 1990 QR4
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Williams

M	14.60688	(1950.0)	P	Q
n	0.17736422	Peri. 231.02767	+0.90054846	+0.41842544
a	3.1373255	Node 103.95092	-0.35169052	+0.86073847
e	0.2038914	Incl. 6.98585	-0.25559001	+0.28991281
P	5.56	H 12.0	G 0.25	

Residuals in seconds of arc
851022 095 0.0 0.2- 900824 675 0.4+ 0.2+ 900826 675 0.1+ 0.7+
851111 095 0.3+ 0.6+ 900824 675 0.4- 0.3- 900826 675 0.2- 1.4-
851120 095 0.3- 0.4- 900826 675 0.7- 0.3+ 900826 675 0.8+ 0.6+

1985 VD = 1990 QG5
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M	15.03078	(1950.0)	P	Q
n	0.17751148	Peri. 210.91064	+0.92479236	+0.37225944
a	3.1355838	Node 127.02861	-0.32582949	+0.88158384
e	0.1634381	Incl. 5.65205	-0.19645413	+0.29022893
P	5.55	H 12.2	G 0.25	

Residuals in seconds of arc
851022 095 0.3- 0.0 851114 054 0.7+ 0.6- 900825 675 0.3+ 0.4+
851109 095 1.1+ 1.3+ 851115 054 1.7- 0.7- 900826 675 0.5+ 0.1+
851111 095 0.2+ 0.0 900825 675 0.2+ 0.4+ 900826 675 1.0- 0.8-

1985 VP3 = 1973 UL3 = 1979 WD7 = 1981 AJ2 = 1987 BN = 1990 QU1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	14.62556	(1950.0)	P	Q
n	0.17178204	Peri. 275.48283	+0.93652808	+0.34971408
a	3.2049226	Node 64.04934	-0.30973319	+0.85845467
e	0.1934248	Incl. 1.58071	-0.16425747	+0.37517416
P	5.74	H 12.3	G 0.25	

Residuals in seconds of arc
731029 095(14.8+ 2.6-) 851120 095 0.1- 0.7- 900825 675 0.9- 0.8+
731029 095 0.1+ 2.4+ 870126 033 0.7+ 0.8+ 900828 675 0.4- 0.8+
791117 095 1.2- 1.4- 870127 033 0.5+ 0.6+ 900828 675 0.5- 0.5+
810108 381 (4.7+ 0.2+) 870128 033 0.1+ 0.3- 900830 400 2.1+ 2.5-
810108 381 0.6+ 0.2+ 900822 675 0.7- 1.5+ 900830 400 1.8+ 2.3-
810108 381 1.9- 0.1+ 900822 675 0.8- 1.2+
851110 095 1.8+ 0.1- 900825 675 0.7- 0.2-

1986 JA = 1990 OP
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano

M	57.97281	(1950.0)	P	Q
n	0.26945198	Peri. 103.38215	-0.12600447	+0.98922803
a	2.3740106	Node 158.94013	-0.97136745	-0.10778332
e	0.1758927	Incl. 11.96607	-0.20141538	-0.09904874
P	3.66	H 13.5	G 0.25	

Residuals in seconds of arc
860502 054 1.3+ 0.8+ 900718 675 0.1- 0.2+ 900728 675 0.2+ 0.8-
860503 054 0.0 0.6- 900718 675 0.9- 1.1+ 900730 675 (9.0- 12.7-)
860510 010 (8.4- 2.0+) 900721 675 0.4- 0.1+ 900816 675 0.4+ 0.2-
860511 010 3.5- 0.6- 900721 675 0.2+ 0.2+ 900816 675 0.2- 0.4+
860512 010 (3.0- 6.6-) 900725 675 0.0 0.7- 900819 675 0.5+ 0.6+
860512 010 (0.8+ 6.9-) 900725 675 0.3+ 1.2- 900819 675 0.1+ 0.7+
860513 054 2.2+ 0.5+ 900728 675 0.0 0.2-

1986 TU6 = 1978 ED7 = 1990 OQ4
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nagata

M	32.73113	(1950.0)	P	Q
n	0.18935798	Peri. 359.26716	+0.26113344	+0.95361446
a	3.0034032	Node 285.86126	-0.88481020	+0.17443740
e	0.0757857	Incl. 8.95682	-0.38590184	+0.24533864
P	5.20	H 11.9	G 0.25	

Residuals in seconds of arc

780305 095	0.1-	0.1-	861010 092	0.9-	0.4-	900727 675	0.8+	0.7-
861005 092	0.9+	0.4+	861010 092	0.4-	0.3+	900727 675	0.4+	0.3-
861005 092	1.5-	0.6-	861011 092	0.7+	0.7-	900728 675	0.3+	0.1+
861009 092	0.4-	0.4+	861012 092	0.8+	0.5+	900728 675	0.2-	1.0+
861009 092	0.2+	0.1-	900725 675	0.4-	0.5-			
861009 092	0.5+	0.1+	900725 675	0.9-	0.3+			

1987 DG6 = 1957 HX = 1983 EX1 = 1984 QA1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	216.08451	(1950.0)	P	Q
n	0.22548934	Peri. 327.90127	-0.10299798	+0.99452360
a	2.6733267	Node 296.18153	-0.90833046	-0.10130443
e	0.1618487	Incl. 1.13185	-0.40537291	-0.02569491
P	4.37	H 13.5	G 0.25	

Residuals in seconds of arc

570430 076	2.2-	1.0-	870225 809	0.1-	0.6+	870303 809	0.2+	0.1+
570430 076	0.6-	1.4+	870226 809	0.2+	0.4+	870304 809	0.4-	0.4-
570505 076	1.8+	1.5-	870226 809	0.3+	0.0	870304 809	0.1-	0.4-
570505 076	1.0+	1.0+	870226 809	0.7+	0.3+	870304 809	0.1-	0.4-
830311 381	0.7+	0.6-	870227 809	0.2-	0.3+	870305 809	0.3+	0.1+
830311 381	0.8-	0.5+	870227 809	0.2+	0.1-	870305 809	0.1+	0.1+
840827 801	0.7+	1.7-	870227 809	0.3+	0.2-	870305 809	0.2-	0.0
870223 809	0.5+	0.1-	870228 809	0.8-	0.6+	870306 809	0.7-	1.1-
870223 809	0.6+	0.4-	870228 809	0.6-	0.2+	870306 809	0.6-	1.2-
870223 809	1.2+	0.2-	870228 809	0.2-	0.1+	870306 809	0.7-	1.2-
870224 809	0.0	0.3+	870301 809	0.1-	0.4+	870307 809	0.4-	0.6-
870224 809	0.4+	0.3+	870301 809	0.2+	0.3+	870307 809	0.6-	0.7-
870224 809	0.9+	0.3+	870301 809	0.4+	0.7+	870307 809	0.8-	1.2-
870225 809	0.5-	0.2+	870303 809	0.2+	0.8+			
870225 809	0.4-	0.2+	870303 809	0.4+	0.2+			

1987 SH2 = 1955 RU = 1969 QE = 1971 BJ2 = 1975 EL3 = 1980 TR10 = 1982 DF6
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M	323.84642	(1950.0)	P	Q
n	0.27701956	Peri. 181.36484	+0.99412657	+0.10602996
a	2.3305715	Node 172.44497	-0.09766032	+0.96523098
e	0.0636376	Incl. 9.49097	-0.04663504	+0.23892846
P	3.56	H 13.8	G 0.25	

Residuals in seconds of arc

550913 760	0.3+	1.7-	870919 071	2.2-	0.5+	870921 046	0.9+	1.1-
690821 095	0.7+	2.9-	870919 071	2.2-	2.8+	870921 071	0.1+	1.8+
710127 805	0.1-	0.4-	870919 071	0.6+	0.4+	870922 071	0.1+	0.5+
750314 095	0.6-	1.3-	870920 071	2.6-	1.7-	870924 095	1.3+	1.4+
801008 095	1.4+	3.9-	870921 071	1.4-	0.8-	870926 801	(4.6+	0.3-)
820227 010	0.3+	0.4+	870921 046	1.4+	0.7+	870927 095	1.7+	1.9+

1987 VG1 = 1976 YA5 = 1980 NF = 1981 UE13
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M 244.76821	(1950.0)	P	Q
n 0.17532356	Peri. 81.33776	+0.94501972	+0.28207749
a 3.1616165	Node 262.15283	-0.32466088	+0.86987123
e 0.1046042	Incl. 9.61360	+0.03915398	+0.40466819
P 5.62	H 12.2	G 0.25	

Residuals in seconds of arc

761218 095	1.1-	0.4-	800713 805	0.9-	0.4+	871128 399	0.5+	0.1+
761220 095	1.1+	0.4-	811023 095	1.4-	3.9+	871128 399	0.8+	0.7-
800711 805	1.3-	0.6-	871115 399	0.6+	0.7-	871212 399	0.6-	0.1-
800712 805	0.6+	1.0-	871115 399	1.2-	2.2-	871212 399	0.8+	0.2+
800712 805	1.2+	1.1-	871122 399	0.6+	0.5-	871212 399	0.1+	1.4-
800713 805	0.9+	1.2-	871122 399	0.3-	0.4+			

1987 WF = 1977 XH = 1990 QY4
Id. E. Bowell (k), G. V. Williams
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams

M 263.81883	(1950.0)	P	Q
n 0.29017965	Peri. 64.40536	-0.26405493	-0.96092891
a 2.2595645	Node 41.18706	+0.83347316	-0.27064627
e 0.0884936	Incl. 7.24170	+0.48538386	-0.05801925
P 3.40	H 13.5	G 0.25	

Residuals in seconds of arc

771210 069	0.1-	0.3+	871027 095	0.7+	0.4+	871124 688	0.1-	0.5+
871020 688	(5.4-	0.0)	871119 688	0.1+	0.1+	900824 675	0.3-	0.3-
871020 688	0.5-	0.3+	871119 688	0.0	0.0	900824 675	0.4+	0.5+
871022 657	(3.8+	2.2+)	871121 095	0.1-	1.4-	900826 675	0.0	0.3+
871022 657	(4.3+	1.7+)	871124 688	(3.8-	0.4+)	900829 675	0.0	0.5-

1988 BS3 = 1972 NH = 1975 ET5 = 1978 ER = 1989 RD5
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda

M 200.95629	(1950.0)	P	Q
n 0.29622969	Peri. 90.44441	-0.32025280	+0.94685937
a 2.2286934	Node 160.79486	-0.90129544	-0.29481017
e 0.1872548	Incl. 5.21942	-0.29172706	-0.12862466
P 3.33	H 14.2	G 0.25	

Residuals in seconds of arc

720713 095	0.3+	1.0-	880121 809	1.0-	0.5-	880127 809	0.3+	0.4-
750315 095	0.2+	2.3+	880121 809	0.2-	0.5-	880127 809	0.7+	0.1-
780305 095	0.0	0.5-	880121 809	0.1+	0.4-	880129 809	0.1+	0.1+
880118 809	1.0-	0.2-	880123 809	0.8-	0.6+	880129 809	1.2+	0.6-
880118 809	0.8-	0.2-	880123 809	0.0	0.4+	880130 809	1.1+	0.1-
880118 809	0.5-	0.2-	880125 809	0.1-	0.4+	890909 095	2.6-	0.3+
880119 809	0.1-	0.1+	880125 809	0.3+	0.3+	890909 095	1.7+	1.5+
880119 809	0.2+	0.3+	880125 809	0.6+	0.3+			

1988 ED = 1988 BA3 = 1988 CJ1
Id. S. Nakano (d, MPC 13035), H. E. Holt (1990 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell

M 264.33157	(1950.0)	P	Q
n 0.23472150	Peri. 133.98816	-0.37319828	-0.92374927
a 2.6027601	Node 337.48989	+0.77374566	-0.25870854
e 0.1025371	Incl. 12.99410	+0.51189911	-0.28241314
P 4.20	H 12.9	G 0.25	

Residuals in seconds of arc

880119 033	1.1+	0.4+	880121 033	0.2-	0.7-	880213 054	0.5+	0.3-
880120 033	0.5-	0.1-	880122 033	0.5-	0.0	880307 888	1.2+	1.4+
880120 033	0.2-	0.3-	880213 054	0.7+	0.5+	880307 888	(2.7+	1.2-)

880307 888 1.3+ 1.1+ 880310 888 1.5- 1.0- 880322 888 2.1+ 0.2-
880307 888 (3.2+ 2.2-) 880310 888 1.5- 0.9- 880322 888 1.4+ 0.3-
880308 888 0.8- 0.9+ 880310 888 (2.3+ 1.7+) 900824 675 0.2- 0.2+
880308 888 (0.7- 2.3+) 880310 888 (2.3+ 3.9+) 900824 675 0.0 0.1+
880309 888 1.8- 0.6- 880312 888 0.3- 0.3+
880309 888 (1.9- 2.1-) 880312 888 0.5- 0.1+

1988 VP4
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bowell
M 180.26544 (1950.0) P Q
n 0.28945319 Peri. 215.54963 -0.72756364 -0.65696804
a 2.2633436 Node 282.12166 +0.66685033 -0.60959632
e 0.6529966 Incl. 11.65990 +0.16112660 -0.44360492
P 3.41 H 15.8 G 0.25
Residuals in seconds of arc
880913 675 (2.2+ 2.3-) 890105 801 0.4- 0.3+ 890416 413 0.4+ 0.1-
880913 675 (0.3+ 4.6-) 890127 568 1.0- 1.3- 890509 474 0.3+ 0.6+
881011 675 (0.5+ 3.5-) 890331 474 0.4+ 1.1- 890509 474 0.5+ 0.2-
881011 675 (0.5- 3.4-) 890331 474 (7.0+ 3.3+) 890604 474 1.7- 1.0-
881104 675 0.8+ 1.4- 890401 474 0.2- 0.8- 890604 474 (2.5- 1.6-)
881104 675 (2.1+ 2.4-) 890401 474 0.4- 0.8- 890605 568 (2.9- 2.1+)
881106 675 1.4+ 1.5- 890404 474 0.1+ 0.1- 890608 474 (1.5- 2.3+)
881106 675 (3.5+ 0.1-) 890404 474 0.8- 0.3- 890608 474 (2.2- 2.6+)
881205 801 0.9- 1.6+ 890414 413 1.5+ 0.7- 890629 474 1.1+ 0.1-
881206 801 0.4- 0.2+ 890415 413 0.6+ 1.0+ 890629 474 1.0+ 0.0
881214 698 0.5+ 1.0- 890415 413 0.2- 0.5- 900827 688 0.3- 0.4-
881214 698 0.0 0.9- 890416 413 0.2+ 0.0 900827 688 0.2+ 0.0

1989 CE2
Id. E. F. Helin (1990 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams
M 4.80007 (1950.0) P Q
n 0.38801149 Peri. 59.65341 +0.90919465 -0.35007876
a 1.8616855 Node 319.59349 +0.14539375 +0.77422632
e 0.0709988 Incl. 20.34946 +0.39016119 +0.52727456
P 2.54 H 13.5 G 0.25
Residuals in seconds of arc
740323 413 0.5+ 0.1- 890213 809 0.1- 0.3+ 890405 675 0.6- 0.1+
740323 413 (4.5+ 0.7+) 890213 809 0.5- 0.4+ 890407 675 0.1+ 0.2-
790520 413 0.5+ 0.9+ 890301 675 1.9+ 2.0- 890407 675 1.1- 1.0-
790520 413 0.8- 0.2+ 890301 675 1.9+ 2.0- 900818 675 0.7- 0.8-
890211 675 1.8- 1.2+ 890305 675 0.8- 1.1+ 900818 675 0.7+ 0.0
890211 675 0.7- 1.1+ 890305 675 0.9+ 0.3+ 900820 675 0.1+ 0.7+
890213 809 0.3+ 0.2+ 890405 675 0.4+ 0.0 900820 675 0.3- 0.3+

1989 FA = 1990 OJ3
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 205.79647 (1950.0) P Q
n 0.28906162 Peri. 350.37133 -0.73960113 -0.67213841
a 2.2653916 Node 147.31002 +0.62170110 -0.70214037
e 0.0861187 Incl. 3.70815 +0.25783309 -0.23500821
P 3.41 H 14.0 G 0.25
Residuals in seconds of arc
890328 402 1.0+ 0.4- 890329 402 1.3- 0.6+ 900730 675 0.0 1.0+
890328 402 0.8+ 0.4+ 900727 675 0.2- 1.2- 900730 675 0.1- 0.9+
890329 402 0.5- 0.6- 900727 675 0.4+ 0.6-

1989 GN = 1949 MH
Id. E. F. Helin (1990 obs.), B. G. Marsden

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Marsden
M 194.83358 (1950.0) P Q
n 0.26847842 Peri. 351.04704 -0.92818129 -0.36993666
a 2.3797463 Node 167.01874 +0.35155711 -0.90723979
e 0.0846220 Incl. 10.34236 +0.12201269 -0.20015700
P 3.67 H 12.5 G 0.25
Residuals in seconds of arc

490620	024	0.0	0.4-	890408	675	0.8-	1.8-	900818	675	1.1-	0.1+
890406	400	0.8-	0.7+	890408	675	0.3-	0.1-	900818	675	0.1+	0.3-
890406	400	1.2-	1.0+	890430	675	1.3+	2.4-	900820	675	0.4+	0.5+
890406	400	1.1+	1.3+	890430	675	0.1-	1.0-	900820	675	0.4+	0.3+
890407	675	0.3+	0.9+	890502	675	0.0	0.9+				
890407	675	0.3+	0.1-	890502	675	0.4+	1.1+				

1989 GO = 1981 AF3
Id. R. H. McNaught (1990 obs.), E. F. Helin (1990 obs.), H. E. Holt (1990 obs.), G. V. Williams
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Williams
M 174.75468 (1950.0) P Q
n 0.26346671 Peri. 111.44655 -0.99708754 -0.05764720
a 2.4098301 Node 65.27750 +0.03152958 -0.90772858
e 0.1332838 Incl. 3.15118 +0.06944294 -0.41557866
P 3.74 H 13.0 G 0.25
Residuals in seconds of arc

810108	381	0.0	0.4-	890430	675	1.1-	1.4-	900818	675	0.7-	1.5+
810108	381	0.1-	0.3-	890502	675	1.3-	0.5-	900818	675	0.3+	1.0+
890407	675	1.1+	0.7+	890502	675	0.4-	0.4+	900820	675	0.6+	0.2+
890407	675	0.8-	0.6+	890604	675	1.2+	0.5+	900820	675	0.2-	0.3+
890408	675	1.0+	0.1+	890606	675	(2.7+	1.1-)	900826	675	0.8+	2.3-
890408	675	0.8+	0.4-	900529	413	(6.9-	2.1-)	900826	675	0.5-	1.5-
890430	675	0.3-	0.5-	900529	413	(10.5-	3.6-)				

1989 VC2 = 1989 TG2 = 1983 VJ1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 81.22494 (1950.0) P Q
n 0.16008444 Peri. 346.20079 +0.99650715 -0.07595024
a 3.3592127 Node 18.26267 +0.08318964 +0.86664433
e 0.1295030 Incl. 6.35997 +0.00727855 +0.49311172
P 6.16 H 12.5 G 0.25
Residuals in seconds of arc

831106	046	(7.3+	2.4+)	831109	046	1.2+	0.8+	891102	877	0.2+	0.4-
831106	046	(5.7+	1.8+)	831109	046	1.1+	0.1+	891102	877	1.8+	0.0
831107	046	1.1-	0.2-	891009	877	0.1-	1.9- Y	891104	877	0.9-	0.9-
831107	046	1.6-	1.0-	891009	877	0.3+	1.5+ Y	891104	877	0.0	0.2+
831108	046	0.3-	0.1+	891029	877	0.3-	0.1-				
831108	046	0.7+	0.2+	891029	877	1.1-	1.5+				

1990 KK
Id. R. H. McNaught (1982 obs.)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams
M 198.01450 (1950.0) P Q
n 0.37234132 Peri. 22.16259 -0.17943568 -0.90138178
a 1.9135592 Node 79.98794 +0.83178912 -0.35291250
e 0.0312078 Incl. 23.59025 +0.52529010 +0.25092558
P 2.65 H 14.0 G 0.25

Residuals in seconds of arc

820717	413	0.6+	0.7-	900521	675	0.0	0.1-	900625	675	1.8-	0.3+
820717	413	0.0	1.3+	900521	675	0.1-	0.1-	900627	675	1.3+	0.8-
900424	413	0.5+	1.7-	900523	675	0.9+	2.6+	900627	675	0.6+	1.5-
900424	413	0.3+	0.1+	900523	675	2.0-	0.2+				

1990 MB

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5					Bowell
M	3.59663		(1950.0)	P	Q
n	0.52409612	Peri.	95.25965	+0.88229742	+0.35173074
a	1.5235689	Node	244.46075	-0.43091080	+0.87096277
e	0.0647868	Incl.	20.28321	+0.18938623	+0.34308794
P	1.88	H	16.1	G 0.25	

From 27 observations 1990 June 20-Aug. 27, mean residual 0".42.

1990 MF

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5					Bowell
M	37.65202		(1950.0)	P	Q
n	0.42920257	Peri.	113.64485	+0.80551046	+0.59235955
a	1.7405821	Node	210.03802	-0.55478320	+0.74422909
e	0.4540204	Incl.	1.85675	-0.20825104	+0.30859880
P	2.30	H	18.7	G 0.25	

From 30 observations 1990 June 26-Aug. 28, mean residual 0".78.

1990 MJ

Epoch 1990 July 8.0 ET = JDE 2448080.5					Bardwell
M	342.76410		(1950.0)	P	Q
n	0.22050774	Peri.	75.69310	+0.82414490	+0.30494538
a	2.7134396	Node	264.73118	-0.48219220	+0.81982958
e	0.3973882	Incl.	28.63984	+0.29711254	+0.48465222
P	4.47	H	13.5	G 0.25	

From 15 observations 1990 June 28-Aug. 20.

1990 OL

Epoch 1990 July 28.0 ET = JDE 2448100.5					Marsden
M	1.57368		(1950.0)	P	Q
n	0.22352352	Peri.	155.25358	+0.58984384	+0.79759464
a	2.6889779	Node	150.40681	-0.77688029	+0.60313253
e	0.4537310	Incl.	14.80640	-0.22032079	+0.00859888
P	4.41	H	16.0	G 0.25	

From 19 observations 1990 July 22-Sept. 10.

1990 OO = 1980 PD2 = 1986 WX7

Id. G. V. Williams, R. Nagata

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P)					Williams
M	308.20851		(1950.0)	P	Q
n	0.18892153	Peri.	205.62605	+0.87470145	-0.48453883
a	3.0080331	Node	183.41596	+0.47021793	+0.85388253
e	0.1009018	Incl.	10.57138	+0.11744135	+0.19001774
P	5.22	H	12.0	G 0.25	

Residuals in seconds of arc

800806	809	0.1+	0.3+	861203	675	0.9+	0.7-	900721	675	1.6+	1.0+
800807	809	0.1-	1.0+	861203	675	(3.3+	0.3-)	900816	675	1.0-	1.9-
800809	809	0.3-	0.0	900718	675	0.5+	0.1+	900816	675	1.1-	0.0
861130	675	(3.3-	1.6+)	900718	675	0.6-	0.3+	900819	675	1.1+	1.4-
861130	675	0.9-	0.2+	900721	675	1.0+	1.0+	900819	675	1.4-	0.4-

1990 OX = 1975 GA1 = 1984 FX1 = 1986 RY15
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Marsden

M	93.66784	(1950.0)	P	Q
n	0.20996893	Peri. 25.98718	-0.64855149	+0.75942041
a	2.8034978	Node 203.68995	-0.71880168	-0.63334036
e	0.0782712	Incl. 7.37732	-0.25040988	-0.14886443
P	4.69	H 12.0	G 0.25	

Residuals in seconds of arc

750415	805	0.0 1.2-	900719	675	1.7+ 1.4-	900817	675	0.8- 1.5+
750420	805	0.2- 0.4+	900719	675	0.0 1.4-	900817	675	0.1- 0.9+
840330	095	0.5- 1.5-	900722	675	0.4+ 1.5-	900819	675	1.2- 1.9+
860912	095	0.9+ 3.0-	900722	675	0.7+ 1.1-	900819	675	0.7- 1.1+

1990 OE2 = 1980 BR4 = 1985 GU = 1988 AN1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nagata

M	355.92204	(1950.0)	P	Q
n	0.24144708	Peri. 231.78555	+0.95976626	+0.17000436
a	2.5541991	Node 117.39648	-0.10418178	+0.95468021
e	0.1369180	Incl. 14.57937	-0.26075829	+0.24430352
P	4.08	H 12.5	G 0.25	

Residuals in seconds of arc

800122	095	0.0 1.2+	880112	046	0.9+ 0.3-	900726	675	0.4- 0.8-
850415	688	3.0- 0.0	880113	046	1.1+ 1.0-	900729	675	0.3- 0.2+
850415	688	1.9- 1.2+	880113	046	0.9+ 0.6-	900729	675	0.3+ 0.3-
850424	688	3.4+ 1.7-	880114	046	2.2- 0.3+	900730	675	0.9+ 0.9+
850424	688	1.3+ 0.3+	880114	046	0.1- 0.0	900730	675	0.8- 0.6+
880112	046	0.7- 0.3+	900726	675	0.1+ 0.9-			

1990 OJ2 = 1953 VY = 1980 RA1 = 1987 WH5
Id. K. Ichikawa, R. Nagata
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nagata

M	320.60973	(1950.0)	P	Q
n	0.29088577	Peri. 328.13194	+0.78667552	-0.61299038
a	2.2559063	Node 69.85120	+0.58154756	+0.69588378
e	0.1438962	Incl. 4.48293	+0.20722951	+0.37415044
P	3.39	H 13.8	G 0.25	

Residuals in seconds of arc

531105	760	0.6- 1.2+	900726	675	0.6+ 0.2-	900730	675	0.3- 1.0+
800914	688	1.3- 1.3-	900726	675	0.1- 0.4-	900730	675	0.4- 0.9+
801008	688	3.0+ 2.5-	900729	675	0.7- 0.7+			
871121	095	0.6- 1.4+	900729	675	0.1+ 0.6+			

1990 OD4 = 1957 FF = 1981 RR = 1986 VF9
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nagata

M	357.28646	(1950.0)	P	Q
n	0.21791705	Peri. 158.53275	+0.97455541	+0.22217311
a	2.7349029	Node 188.78964	-0.22330837	+0.95092024
e	0.0627386	Incl. 11.19958	-0.01936810	+0.21538295
P	4.52	H 11.6	G 0.25	

Residuals in seconds of arc

570321	024	0.1- 0.7-	810903	704	2.1+ 0.0	900726	675	0.4+ 0.0
810901	704	0.5- 2.3-	810903	704	0.9+ 0.5-	900728	675	0.3+ 0.1+
810901	704	1.5- 0.3-	861104	095	0.1+ 0.4-	900730	675	0.8- 0.2+
810902	704	0.9- 2.6+	900726	675	0.1+ 0.6-	900730	675	0.0 0.4+

1990 QF = 1987 SL25
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 343.43498 (1950.0) P Q
n 0.31054524 Peri. 51.01387 +0.92612366 -0.37443253
a 2.1596680 Node 330.89150 +0.31040712 +0.82540794
e 0.1516560 Incl. 5.39924 +0.21434177 +0.42249499
P 3.17 H 14.0 G 0.25
Residuals in seconds of arc
870923 095 0.6+ 2.2+ 900824 372 0.9+ 0.3- 900826 372 0.5- 0.2-
870926 095 0.4- 2.4- 900824 372 0.6+ 0.1- 900828 372 1.8+ 1.1+
900820 372 1.2- 1.3- 900824 403 1.4- 0.0 Y 900910 372 1.1+ 0.8-
900820 372 2.2+ 0.7- 900824 403 0.6- 1.6+ Y 900910 372 3.1- 1.6+
900821 403 (9.3- 6.0-)Y 900826 403 (4.3- 2.3+)Y
900821 403 (6.8- 3.5-)Y 900826 372 0.1+ 0.7-

1990 QC1 = 1949 OL = 1989 BZ1
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
M 75.52848 (1950.0) P Q
n 0.26533087 Peri. 304.02954 -0.31979213 +0.93994738
a 2.3985247 Node 306.87122 -0.81266099 -0.33683934
e 0.2169557 Incl. 8.57620 -0.48714999 -0.05511975
P 3.71 H 13.2 G 0.25
Residuals in seconds of arc
490728 024 0.0 0.0 890201 046 1.3+ 1.7+ 900830 400 1.1+ 0.8+
490730 024 1.0- 2.4+ 900818 400 0.7+ 1.6+ 900916 400 1.4- 1.7+
890131 046 1.3- 1.1+ 900818 400 2.3+ 1.1- 900916 400 1.4- 2.3-
890131 046 (4.5- 0.2+) 900830 400 0.7- 0.8+
890201 046 1.6+ 0.8+ 900830 400 1.2- 0.9-

1990 QT3 = 1935 SH1 = 1961 UK = 1976 GZ1 = 1977 RX1 = 1987 UU9
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Williams
M 349.47047 (1950.0) P Q
n 0.30437411 Peri. 283.44345 +0.90601188 -0.42230652
a 2.1887615 Node 101.54284 +0.39862142 +0.82892096
e 0.1708236 Incl. 1.65392 +0.14227945 +0.36680681
P 3.24 H 13.5 G 0.25
Residuals in seconds of arc
350929 078(90.0+ 8.2-)X 760404 095 0.0 0.1- 900830 400 0.7+ 1.7+
611018 760 1.6+ 0.5- 770908 095 0.1+ 0.3- 900830 400 1.1+ 0.3+
611018 760 1.4- 0.2+ 871028 095(81.2- 23.8-) 900913 392 2.4- 0.5+
760401 095 0.1- 0.2- 900822 675 0.3+ 1.2- 900913 392 0.2+ 0.8-

1990 QW3 = 1987 SA5
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Nakano
M 52.61589 (1950.0) P Q
n 0.31452623 Peri. 341.00184 +0.47354042 +0.88051936
a 2.1414059 Node 317.25557 -0.80397325 +0.42234330
e 0.1548898 Incl. 1.78132 -0.35970332 +0.21520177
P 3.13 H 15.0 G 0.25
Residuals in seconds of arc
870929 054 0.4+ 0.1- 900822 675 0.5- 0.7+ 900827 675 0.6+ 1.5-
870930 054 0.6+ 0.0 900822 675 0.1+ 0.7+ 900827 675 0.9+ 0.1-
870930 054 0.3+ 0.5+ 900823 675 0.6+ 0.3+
871002 054 1.4- 0.3- 900823 675 1.6- 0.1-

1990 SA
Epoch 1990 Sept. 6.0 ET = JDE 2448140.5 Marsden

M 22.89272	(1950.0)		P	Q
n 0.35974631	Peri.	114.33033	+0.30353372	+0.94876457
a 1.9579660	Node	171.71170	-0.93134091	+0.27596703
e 0.4300098	Incl.	37.53440	+0.20117502	-0.15390903
P 2.74	H 17.0	G 0.25		

From 19 observations 1990 Sept. 14-24.

1990 SB
Epoch 1990 Sept. 6.0 ET = JDE 2448140.5 Marsden

M 28.41896	(1950.0)		P	Q
n 0.26413423	Peri.	85.91154	+0.09367658	+0.99410067
a 2.4057635	Node	189.97215	-0.99180215	+0.08838502
e 0.5513826	Incl.	18.40243	-0.08690905	+0.06286455
P 3.73	H 14.0	G 0.25		

From 14 observations 1990 Sept. 16-25.

1990 SM
Epoch 1990 Sept. 6.0 ET = JDE 2448140.5 Marsden

M 12.84477	(1950.0)		P	Q
n 0.34528014	Peri.	105.15197	-0.44235681	+0.88690517
a 2.0122796	Node	137.76972	-0.87994634	-0.40054448
e 0.7573077	Incl.	11.42325	-0.17324804	-0.23013764
P 2.85	H 16.5	G 0.25		

From 7 observations 1990 Sept. 22-24.

1990 SP
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams

M 335.06040	(1950.0)		P	Q
n 0.62511524	Peri.	47.95951	-0.04205858	-0.98522383
a 1.3546569	Node	45.28884	+0.83366323	-0.12619399
e 0.3871628	Incl.	13.51049	+0.55066931	+0.11579758
P 1.58	H 17.0	G 0.25		

From 7 observations 1990 Aug. 18-Sept. 24, mean residual 0".75.

4577 P-L = 1990 QK1
Id. G. V. Williams, E. Bowell
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Williams

M 288.62426	(1950.0)		P	Q
n 0.22878738	Peri.	272.77106	+0.05659455	-0.99811704
a 2.6475787	Node	173.83345	+0.98097281	+0.05118456
e 0.1365243	Incl.	12.72007	+0.18571324	+0.03380115
P 4.31	H 13.0	G 0.25		

Residuals in seconds of arc

600924	675	0.2-	0.1+	601017	675	0.6-	0.2+	900822	675	0.4+	0.6-
600926	675	0.7-	0.0	601022	675	0.2+	0.2+	900822	675	0.3-	0.3-
600927	675	0.4+	0.1+	601025	675	0.0	0.1-	900828	675	0.1+	0.4-
600928	675	0.6+	0.4-	601026	675	0.4+	0.2-	900828	675	0.2-	1.3+

3099 T-2 = 1987 EG = 1990 QF3
Id. E. Bowell (k), G. V. Williams
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams

M 267.94346	(1950.0)		P	Q
n 0.17263245	Peri.	299.44506	-0.30393053	-0.95200707
a 3.1943887	Node	168.08161	+0.92345513	-0.30372570
e 0.1696039	Incl.	10.08887	+0.23421538	-0.03785815
P 5.71	H 12.0	G 0.25		

Residuals in seconds of arc

730919	675	1.8-	1.6+	730929	675	0.8+	0.1+	731005	675	1.8+	0.1-
730919	675	2.2-	1.2+	730929	675	1.2+	0.9-	870303	688	0.0	2.3-
730920	675	0.2-	1.5+	730930	675	1.8-	0.2+	870303	688	0.1-	1.9+
730924	675	1.9-	0.8-	730930	675	0.1+	0.5-	900822	675	0.7+	0.2-
730924	675	1.3-	0.4+	731004	675	2.3+	0.0	900822	675	0.9-	0.7-
730925	675	0.2-	1.5-	731004	675	2.9+	0.3-	900828	675	0.2-	0.2+
730925	675	0.7-	0.4-	731005	675	1.0+	0.3+	900828	675	0.7+	0.4-

4069 T-2 = 1969 VA3 = 1990 QQ2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5		(J-P)		Williams	
M	342.52890	(1950.0)	P		Q
n	0.23122172	Peri.	242.95323	+0.78311934	-0.62031770
a	2.6289632	Node	155.30920	+0.60128795	+0.73728144
e	0.2089509	Incl.	6.03704	+0.15867231	+0.26762291
P	4.26	H	13.0	G 0.25	

Residuals in seconds of arc

691115	095	0.1+	0.5-	730925	675	0.2-	0.0	731005	675	0.6-	2.1+
730919	675	0.7-	0.2-	730929	675	1.7+	1.1-	731005	675	0.8-	1.4+
730919	675	0.2-	1.3-	730929	675	2.1+	1.1-	900824	675	0.8-	0.2-
730920	675	1.5-	0.2-	730930	675	0.5-	1.3+	900824	675	0.8-	0.9-
730924	675	0.4-	0.5+	730930	675	1.0-	0.1-	900829	675	0.0	1.1-
730924	675	0.3+	0.3+	731004	675	1.2+	0.8-	900829	675	1.8+	1.2+
730925	675	1.1-	0.1-	731004	675	1.4+	0.3+				

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NEW NAMES OF MINOR PLANETS.

(1986) Plaut = 1935 SV1

Discovered 1935 Sept. 28 by H. van Gent at Johannesburg.

Named in honor of Lukas Plaut (1910-1984), Dutch astronomer, who worked at the Leiden Observatory from 1933 to 1940 and at the Kapteyn Laboratory in Groningen from 1940 to 1975. He is well known for his investigations of RR Lyrae variables near the Galactic Center. Born in Germany, he emigrated to Holland in 1933. During part of World War II he was interned in a working camp near the German town of Furstenau under an assumed name, because of his Jewish descent; he escaped from there and returned to Holland. Name proposed by the Leiden Observatory.

(2562) Chaliapin = 1973 FF1

Discovered 1973 Mar. 27 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Named in memory of Feodor Ivanovich Chaliapin (1873-1938), outstanding Russian singer and actor.

(2745) San Martin = 1976 SR10

Discovered 1976 Sept. 25 at the Estacion Astronomica Dr. Carlos U. Cesco.

Named in memory of General Jose de San Martin (1778-1850), considered the father of Argentina and liberator of Chile and Peru. After fighting for Spain in Bailen against the Napoleonic army he returned to his native Argentina and created the Granaderos a Caballo regiment, which won the battle of San Lorenzo in 1812. As governor intendent of Cuyo, he created the Andes army, crossed those mountains, and by conquering the Spanish army at the battles of Chacabuco and Maipu (1817-1818) assured Chile’s independence. His defeat of the Royal army in Peru in 1820 led to the independence of that nation also. He refused to take part in the subsequent civil war in Argentina and moved to Europe.

(2808) Belgrano = 1976 HS

Discovered 1976 Apr. 23 at the Estacion Astronomica Dr. Carlos U. Cesco.

Named in memory of General Manuel Belgrano (1770-1820), creator of the Argentinian national flag. After studying law in Spain he returned to his native land and served as secretary for the commerce consulate of the viceroyship El Rio de la Plata. A deep believer in freedom and education, he hailed the establishment of the schools of agriculture, commerce and navigation in La Plata and was restless in his fight to improve the social and economic conditions of his people. Pioneer of the May revolution and a member of the first La Plata governmental meeting (1810), he participated in the first military campaign to Paraguay (1811) and defeated the Spanish army in Tucaman and Salta (1812-1813). He traveled to Europe on a diplomatic mission in the hope of gaining independence for these lands. On his return he was put in charge of the army fighting in Peru, and after his death in Buenos Aires he was considered the spiritual martyr of anarchy in his motherland.

(3322) Lidiya = 1975 XY1

Discovered 1975 Dec. 1 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Named in honor of Lidiya Vissarionovna Zvereva (1890-1916), the first Russian female pilot. She began flying in 1911, instructed other pilots and was also involved in constructing airplanes.

(3347) Konstantin = 1975 VN1

Discovered 1975 Nov. 2 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Named in memory of Konstantin Alekseevich Kalinin (1889-1938), a remarkable flier and talented aircraft designer who constructed many aircraft of various types, one of which was awarded a gold medal at the International Aviation Exhibition in Berlin in 1928.

(3418) Izvekov = 1973 QZ1

Discovered 1973 Aug. 31 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Named in honor of Vladimir Andreevich Izvekov, an expert on solar-system dynamics and a staff member of the Institute for Theoretical Astronomy from 1951 to 1988. One of the first in the U.S.S.R. to employ electronic computers for improving orbits of minor planets and computing ephemerides, he contributed extensively to automation and quality control in the preparation of the "Ephemerides of Minor Planets".

(3433) Fehrenbach = 1963 TJ1

Discovered 1963 Oct. 15 at the Goethe Link Observatory, Indiana University.

Named in honor of Charles Fehrenbach, who pioneered the successful use of the objective prism to measure stellar radial velocities. One of his instruments was used to identify members of the Magellanic Clouds from their radial velocities, starting in 1961 during the ESO site survey in southern Africa and continuing in 1968 on La Silla in Chile. He served as vice president of the IAU from 1973 to 1979, as a member of ESO and president of its Commission on Instruments, and as a member and president of the council of the Canada-France-Hawaii Observatory. His many honors include membership in the French Academy of Sciences, the gold medal of the CNRS and the grand scientific prize of the city of Paris. Name proposed by F. K. Edmondson.

(3447) Burckhalter = 1956 SC
Discovered 1956 Sept. 29 at the Goethe Link Observatory, Indiana University.
Named in memory of Charles Burckhalter (1849-1923), well known for his research in solar-eclipse photography, a founder of the Astronomical Society of the Pacific and its first vice president. He became the first full-time director of the two-year-old Chabot Observatory in downtown Oakland, California, in 1885 and built it into an important popular-science institution. Under his direction it was moved to a new building at a darker hill site in 1913 and featured a 50-cm refractor. Name proposed by N. Sperling with the concurrence of F. K. Edmondson.

(3460) Ashkova = 1973 QB2
Discovered 1973 Aug. 31 by T. M. Smirnova at the Crimean Astrophysical Observatory.
Named in honor of Nataliya Vladimirovna Ashkova, an expert on the dynamics of minor planets on the staff of the Institute for Theoretical Astronomy from 1954 to 1987. She was heavily involved in the automation of computations and to the improvement of orbits of minor planets for the "Ephemerides of Minor Planets".

(3471) Amelin = 1977 QK2
Discovered 1977 Aug. 21 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in memory of Valentin Mikhajlovich Amelin (1930-1989), an authority on geodesy who lectured on the subject at Leningrad University. A staff member of the Institute of Theoretical Astronomy since 1956, he took part in the preparation of the Naval Astronomical Almanac from 1962 and became supervisor of this work in 1977.

(3562) Ignatius = 1984 AZ
Discovered 1984 Jan. 8 by J. F. Wagner at the Anderson Mesa Station of the Lowell Observatory.
Named in honor of the 500th anniversary of the birth of Ignatius Loyola, founder of the Jesuits.

(3589) Loyola = 1984 AB1
Discovered 1984 Jan. 8 by J. F. Wagner at the Anderson Mesa Station of the Lowell Observatory.
Named for the town in Spain, birthplace of Ignatius, founder of the Jesuits.

(3750) Ilizarov = 1982 TD1
Discovered 1982 Oct. 14 by L. G. Karachkina at the Crimean Astrophysical Observatory.
Named in honor of Gavriil Abramovich Ilizarov, a remarkable orthopedic surgeon whose new methods have cured more than half a million patients.

(3772) Piaf = 1982 UR7
Discovered 1982 Oct. 21 by L. G. Karachkina at the Crimean Astrophysical Observatory.
Named in memory of the great French singer Edith Piaf (1915-1963).

(3786) Yamada = 1988 AE
Discovered 1988 Jan. 10 by T. Kojima at Chiyoda.
Named in memory of Sakao Yamada (1918-1986), an outstanding Japanese engineer who devoted his life to the research and development of aspherical optics. Founder of Japan Special Optics, he made much optical equipment for Japanese amateur astronomers in cooperation with Nobuhisa Kojima, discoverer

of two comets and 1973 MA, the first minor planet discovered by a Japanese amateur and one of the identifications for 1988 AE. Yamada, a teacher of both N. Kojima and the discoverer (no relation), pioneered the mass production of Schmidt-type cameras in Japan. With their high performance and capability, ease of handling and precise star images, these Schmidt cameras, which include the 0.25-m Wright Schmidt with which this discovery was made, have produced many splendid astro-photographs and discoveries of new heavenly bodies.

(3930) Vasilev = 1982 UV10

Discovered 1982 Oct. 25 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Named in memory of Konstantin Alekseevich Vasil'ev (1942-1976), a well known Russian painter.

(3933) Portugal = 1986 EN4

Discovered 1986 Mar. 12 by R. M. West at the European Southern Observatory.

Named in honor of the European country whose famous navigators studied the skies with great skill and discovered many new routes to distant shores under southern stars. Its recent association with ESO now opens new, exciting celestial paths for its modern astronomers.

(4017) Disneya = 1980 DL5

Discovered 1980 Feb. 21 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Named in memory of Walt Disney (1901-1966), the outstanding American movie producer and master of animation.

(4058) Cecilgreen = 1986 JV

Discovered 1986 May 4 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Cecil H. Green, co-founder of Texas Instruments and philanthropist extraordinary, to acknowledge a lifelong commitment to improve the quality of education and scientific research. Green and his late wife Ida funded educational and scientific projects throughout the world, such as academic buildings, health care centers, hospitals, libraries, scholarships and professorships. The Greens assisted in founding new colleges at the University of Texas at Dallas, at Oxford University in England and, in March 1990, Green College at the University of British Columbia. A graduate in electrical engineering, Green spent many years in geophysical field work before becoming a partner of Geophysical Service, Inc., in 1941. He and his partners created a division of that company that ultimately became Texas Instruments. In 1954 Texas Instruments pioneered the first successful commercialization of the silicon transistor. Green is a noted salmon fisherman. Name suggested by and citation prepared at the University of British Columbia.

(4071) Rostovdon = 1981 RD2

Discovered 1981 Sept. 7 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Named for the city of Rostov, the discoverer's birthplace, a large industrial and railroad center located on the picturesque banks of the Don.

(4075) Sviridov = 1982 TL1

Discovered 1982 Oct. 14 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Named in honor of Georgij Vasil'evich Sviridov, a well-known Soviet composer.

(4080) Galinskij = 1983 PW

Discovered 1983 Aug. 4 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Named in honor of Nikolaj Dmitrievich Galinskij, Soviet radio engineer, creator of high-sensitivity image tubes for astronomical observations. The high quantum efficiency and excellent quality of these tubes were significant to the successful development of modern observational astronomy, and as long ago as 1964 stars of twentieth magnitude were being recorded with the 0.5-m telescope at the Crimean Astrophysical Observatory with an exposure of only 4 seconds. Galinskij is a coauthor of "Television Astronomy", published in 1984. Citation provided by V. V. Prokof'eva at the request of the discoverer.

(4121) Carlin = 1986 JH

Discovered 1986 May 2 at Palomar in the course of the International Near-Earth Asteroid Survey.

Named by Steve Singer-Brewster in honor of his daughter, Carlin Singer-Brewster, on the occasion of her seventh birthday.

(4247) Grahamsmith = 1983 WC

Discovered 1983 Nov. 28 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Sir Francis Graham-Smith, the thirteenth Astronomer Royal, and physics secretary of the Royal Society, London, on the occasion of his retirement. Sir Francis has been professor of Radio Astronomy at Manchester since 1964 and director of the Radio Astronomy Laboratories since 1981. In addition, he was director of the Royal Greenwich Observatory between 1975 and 1981 and served both as secretary of the Royal Astronomical Society from 1964 to 1971 and president from 1975 to 1977. Name suggested and citation material provided by S. A. Mitton.

(4258) Ryazanov = 1987 RZ2

Discovered 1987 Sept. 1 by L. G. Karachkina at the Crimean Astrophysical Observatory.

Named in honor of Ehldar Aleksandrovich Ryazanov, a well-known Soviet movie producer, writer and poet.

(4279) De Gasparis = 1982 WB

Discovered 1982 Nov. 19 at the Osservatorio San Vittore.

Named in memory of Annibale De Gasparis (1819-1892), Italian astronomer, director of the Observatory of Naples from 1864 to 1889. A great observer of minor planets, he discovered visually those numbered 10, 11, 13, 15, 16, 20, 24, 63 and 83 and made an independent discovery of (14). He was also the author of several memoirs on orbit determination and other problems in theoretical astronomy.

(4281) Pounds = 1985 TE1

Discovered 1985 Oct. 15 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Kenneth A. Pounds, professor of physics at Leicester University, where he has directed x-ray astronomy, in which he is a pioneer, for 25 years. Pounds leads the British participation on ROSAT, which has just produced the first x-ray and XUV photographs of the Moon. An active supporter of amateur initiatives through many talks to societies, he is strongly in favour of publicising astronomy in the most general way. Pounds is currently president of the Royal Astronomical Society and was awarded the Commander of the British Empire for services to astronomy. Name suggested and citation material provided by S. A. Mitton.

(4393) Dawe = 1978 VP8
Discovered 1978 Nov. 7 by E. F. Helin and S. J. Bus at Palomar.
Named in honor of John A. Dawe, who was astronomer-in-charge at the U.K. Schmidt in 1979 when the first discoverer proposed that plates be taken for a limited asteroid survey. Dawe and his staff of astronomers were hospitable and helpful during that first short survey, and they later collaborated in the more comprehensive and highly successful United Kingdom-Caltech Faint Asteroid Survey (UCAS) that was carried out in 1981.

(4422) Jarre = 1942 UA
Discovered 1942 Oct. 17 by L. Boyer at Algiers.
Named in honor of the French composers Maurice (1924-) and Jean-Michel Jarre (1949-). Maurice studied composition at the Paris conservatoire, and wrote serial music for concert works and boldly dramatic theatre music, before turning to film music, winning Oscars for his score to 'Lawrence of Arabia' (1963) and for 'Lara's Theme' from 'Doctor Zhivago' (1965). Jean-Michel abandoned his musical studies at the Conservatoire de Paris in 1967 to experiment with electronic music. His first commercial success was 'Oxygene' (1977). Further successful recordings followed, and in 1981 he became the first Western rock artist to play concerts in China. Jean-Michel is best known for his spectacular live shows. Name proposed by G. V. Williams, who made the principal identification involving this object.

(4461) Sayama = 1990 EL
Discovered 1990 Mar. 5 by A. Sugie at the Dynic Astronomical Observatory.
Named in honor of a city located in the Musashino hills in the center of the Kantou plain. In the southeastern part of Saitama prefecture, Sayama is on the Iruma river and famous for producing good Japanese green tea. Since 1954 Sayama has developed with Irumagawa city and some villages into a new industrial area and as a residential area for the commuters to Tokyo. Sayama observes and promotes various traditional cultures and is noted in particular for its Star Festival ("Tanabata"), when the main streets are beautifully decorated with bamboo trees.

(4492) Debussy = 1988 SH
Discovered 1988 Sept. 17 by E. W. Elst at Haute Provence.
Named in memory of Claude Debussy (1862-1918), famous French impressionistic composer, known particularly for his "Clair de Lune", "Jardins sous la Pluie" and "Feux d'Artifice", and more generally for his brilliant suites for the piano, such as "Estampes", "Bergamasque" and "Images". While his music is the spontaneous expression, the reflection and the image of sensation, it reaches the innermost part of one's subconscious. This effect is obtained by using free harmonies, different scales (from other cultures, e.g., in "Jardins sous la Pluie") and daring mixtures of tones. Debussy was a fervent admirer of Chopin, even to the extent of also composing two books of twelve "Preludes" and an album of "Etudes".

(4501) Eurypylos = 1989 CJ3
Discovered 1989 Feb. 4 by E. W. Elst at the European Southern Observatory.
Named for the legendary king of Thessalon, who directed forty vessels at the siege of Troy. He was hit by an arrow from Paris but was rescued by Patroclus.

(4559) Strauss = 1989 AP6
Discovered 1989 Jan. 11 by F. Borngen at Tautenburg.
Named in memory of the Austrian composer Johann Strauss (1825-1899), who represented Viennese dance music at its zenith. The leading master of

Viennese operettas ("Die Fledermaus", "Zigeunerbaron", etc.), he was also the creator of immortal waltzes, such as the "Blue Danube", "Tales of the Vienna Woods" and the "Kaiser Waltz".

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EPHEMERIDES.

1990 SM a,e,i = 2.01, 0.76, 11 Elements MPC 17025

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	09 26	20 59.87	-47 14.9	0.269	1.149	116.9	51.1	15.6
1990	10 01	21 39.77	-41 29.3					
1990	10 06	22 03.12	-37 07.6	0.416	1.279	123.9	40.5	16.5
1990	10 11	22 18.83	-33 45.7					
1990	10 16	22 30.58	-31 03.3	0.581	1.403	123.3	36.5	17.4
1990	10 21	22 40.10	-28 47.6					
1990	10 26	22 48.31	-26 50.3	0.759	1.521	119.7	34.6	18.1
1990	10 31	22 55.70	-25 06.3					
1990	11 05	23 02.58	-23 32.1	0.947	1.633	114.7	33.5	18.7
1990	11 10	23 09.13	-22 05.3					
1990	11 15	23 15.48	-20 44.1	1.144	1.740	109.1	32.5	19.2
1990	11 20	23 21.71	-19 27.4					
1990	11 25	23 27.88	-18 14.3	1.348	1.842	103.1	31.5	19.7

1982 DB a,e,i = 1.49, 0.36, 1 Elements MPC 17014

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	09 26	22 34.99	-06 24.4	0.599	1.569	155.8	15.2	19.6
1990	10 06	22 19.67	-07 45.1					
1990	10 16	22 09.35	-08 39.9	0.619	1.469	129.4	31.6	20.0
1990	10 26	22 05.06	-09 03.7					
1990	11 05	22 06.73	-08 56.7	0.670	1.364	108.8	43.5	20.3
1990	11 15	22 13.71	-08 21.1					
1990	11 25	22 25.32	-07 18.8	0.717	1.255	93.5	51.7	20.5
1990	12 05	22 40.85	-05 51.6					
1990	12 15	22 59.78	-04 01.2	0.737	1.149	82.4	58.1	20.5

1990 SA a,e,i = 1.96, 0.43, 38 Elements MPC 17026

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	09 26	23 08.00	-17 29.8	0.423	1.401	156.5	16.6	16.6
1990	10 06	23 12.55	-26 15.5					
1990	10 16	23 18.90	-31 00.6	0.661	1.515	130.9	29.8	18.1
1990	10 26	23 27.08	-33 17.1					
1990	11 05	23 36.91	-34 01.8	0.947	1.632	114.6	33.5	19.2
1990	11 15	23 48.10	-33 47.8					
1990	11 25	00 00.41	-32 54.8	1.253	1.748	101.9	33.6	19.9
1990	12 05	00 13.62	-31 35.8					
1990	12 15	00 27.53	-29 59.2	1.564	1.860	90.8	31.9	20.5

Comet Mueller (1990j) Elements MPC 16994

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1990	09 26	00 40.45	+11 32.5	1.534	2.520	166.5	5.3	16.9
1990	10 06	00 35.13	+10 12.4					
1990	10 16	00 29.34	+08 34.6	1.356	2.339	167.3	5.4	16.4
1990	10 26	00 24.10	+06 47.2					
1990	11 05	00 20.53	+05 00.8	1.279	2.167	144.9	15.3	15.9
1990	11 15	00 19.51	+03 25.6					
1990	11 25	00 21.71	+02 10.1	1.280	2.006	124.0	24.1	15.6

1990 SP a,e,i = 1.35, 0.39, 14 Elements MPC 17025

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 09 26	01 04.62	-48 53.9	0.260	1.183	128.8	41.4	15.9
1990 10 01	00 51.68	-51 32.9					
1990 10 06	00 32.97	-54 10.0	0.207	1.121	121.1	49.8	15.5
1990 10 11	00 06.14	-56 38.5					
1990 10 16	23 27.71	-58 43.8	0.159	1.060	109.0	62.8	15.2
1990 10 21	22 33.25	-59 52.8					
1990 10 26	21 20.19	-58 55.5	0.117	1.001	89.8	83.4	15.0
1990 10 31	19 54.99	-53 54.9					
1990 11 05	18 34.65	-43 09.0	0.090	0.946	57.3	118.1	16.2

1990 SB a,e,i = 2.41, 0.55, 18 Elements MPC 17025

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 09 26	01 28.28	+08 01.5	0.800	1.772	158.7	11.9	15.4
1990 10 06	01 16.41	+03 59.1					
1990 10 16	01 05.38	+00 30.1	0.925	1.916	171.2	4.6	15.6
1990 10 26	00 56.63	-02 10.9					
1990 11 05	00 50.96	-04 00.9	1.151	2.057	147.3	15.1	16.6
1990 11 15	00 48.49	-05 05.2					
1990 11 25	00 48.99	-05 31.7	1.456	2.192	126.5	21.2	17.4

Periodic Comet Holt-Olmstead (1990k) Elements MPC 16994

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1990 09 26	01 32.26	+09 13.3	1.076	2.038	157.3	10.9	17.3
1990 10 06	01 23.46	+10 28.6					
1990 10 16	01 13.35	+11 36.6	1.047	2.043	176.4	1.8	17.2
1990 10 26	01 03.52	+12 37.4					
1990 11 05	00 55.54	+13 33.2	1.115	2.058	155.3	11.6	17.4
1990 11 15	00 50.46	+14 27.1					
1990 11 25	00 48.83	+15 22.5	1.269	2.084	134.6	19.7	17.7

1980 WF a,e,i = 2.23, 0.51, 6 Elements MPC 5841

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		V
1990 09 26	02 38.50	+27 26.4	0.573	1.466	-6.79	-19.6	19.2
1990 10 01	02 46.30	+28 09.2					
1990 10 06	02 54.33	+28 47.1	0.474	1.400	-8.62	-22.2	18.7
1990 10 11	03 02.68	+29 18.7					
1990 10 16	03 11.46	+29 42.3	0.386	1.336	-11.09	-24.9	18.1
1990 10 21	03 20.83	+29 55.6					
1990 10 26	03 31.05	+29 55.9	0.310	1.276	-14.44	-26.9	17.4
1990 10 31	03 42.40	+29 39.5					
1990 11 05	03 55.25	+29 01.6	0.245	1.222	-18.96	-25.8	16.7
1990 11 10	04 09.96	+27 56.1					
1990 11 15	04 26.88	+26 14.9	0.193	1.174	-24.92	-16.5	16.0

(4544) 1989 FB a,e,i = 1.04, 0.25, 14 Elements MPC 16572

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 12 15	16 04.86	+55 41.7	0.222	0.974	80.8	86.2	16.7
1990 12 25	15 55.74	+63 34.8					
1991 01 04	15 38.4	+70 40.0	0.263	1.059	99.6	66.2	16.6
1991 01 14	14 52.1	+77 20.9					
1991 01 24	12 25.9	+81 55.1	0.301	1.137	113.2	52.7	16.6
1991 02 03	09 09.1	+79 20.5					
1991 02 13	07 59.1	+72 15.9	0.354	1.202	119.6	45.6	16.9
1991 02 23	07 42.41	+64 26.3					
1991 03 05	07 43.60	+56 55.4	0.437	1.252	116.9	44.9	17.4
1991 03 15	07 52.38	+50 02.2					
1991 03 25	08 05.13	+43 49.9	0.549	1.285	109.0	47.2	18.0

1989 SO8 a,e,i = 3.15, 0.15, 3 Elements MPC 16877

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	10 16	04 27.80	+21 00.6	2.690	3.451	133.2	12.2	18.0
1990	10 26	04 23.40	+20 54.2					
1990	11 05	04 17.13	+20 43.4	2.543	3.470	155.7	6.8	17.7
1990	11 15	04 09.47	+20 28.5					
1990	11 25	04 01.10	+20 10.8	2.502	3.489	179.4	0.2	17.2
1990	12 05	03 52.81	+19 52.0					
1990	12 15	03 45.35	+19 34.5	2.582	3.506	156.3	6.5	17.7
1990	12 25	03 39.36	+19 20.4					
1991	01 04	03 35.27	+19 11.9	2.772	3.522	133.6	11.7	18.1

(4588) 1931 EE a,e,i = 2.94, 0.10, 10 Elements MPC 17001

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	11 05	05 41.09	+37 07.9	1.895	2.680	134.0	15.4	16.5
1990	11 15	05 36.49	+37 37.8					
1990	11 25	05 28.85	+37 56.0	1.749	2.672	153.9	9.3	16.1
1990	12 05	05 19.01	+37 58.0					
1990	12 15	05 08.19	+37 41.2	1.702	2.665	165.0	5.5	15.9
1990	12 25	04 57.88	+37 06.6					
1991	01 04	04 49.45	+36 18.7	1.764	2.660	149.8	10.7	16.1
1991	01 14	04 43.82	+35 23.9					
1991	01 24	04 41.46	+34 28.1	1.919	2.657	129.5	16.6	16.5

1976 GH2 a,e,i = 3.15, 0.13, 1 Elements MPC 17012

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	11 25	06 37.18	+21 27.3	2.604	3.446	143.2	9.9	17.3
1990	12 05	06 30.99	+21 30.0					
1990	12 15	06 23.29	+21 33.8	2.497	3.462	166.6	3.8	17.0
1990	12 25	06 14.74	+21 37.8					
1991	01 04	06 06.18	+21 41.4	2.507	3.477	168.8	3.2	17.0
1991	01 14	05 58.40	+21 44.6					
1991	01 24	05 52.09	+21 47.6	2.637	3.491	145.2	9.3	17.4
1991	02 03	05 47.73	+21 50.9					
1991	02 13	05 45.55	+21 55.0	2.861	3.503	123.4	13.6	17.7

1988 BS3 a,e,i = 2.23, 0.19, 5 Elements MPC 17019

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	11 25	07 03.09	+15 29.9	1.811	2.614	136.1	15.2	18.3
1990	12 05	06 57.19	+15 23.8					
1990	12 15	06 48.62	+15 25.9	1.655	2.598	159.0	7.8	17.9
1990	12 25	06 38.08	+15 35.7					
1991	01 04	06 26.73	+15 52.4	1.604	2.579	170.4	3.6	17.6
1991	01 14	06 15.85	+16 14.3					
1991	01 24	06 06.70	+16 40.2	1.669	2.557	148.1	11.8	18.0
1991	02 03	06 00.20	+17 08.5					
1991	02 13	05 56.77	+17 38.4	1.825	2.533	125.8	18.4	18.4

1989 VC2 a,e,i = 3.36, 0.13, 6 Elements MPC 17021

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 00.33	+29 15.2	2.544	3.397	145.0	9.6	17.7
1990	12 25	07 53.88	+29 46.1					
1991	01 04	07 45.86	+30 13.9	2.458	3.421	166.4	3.9	17.4
1991	01 14	07 37.01	+30 35.1					
1991	01 24	07 28.23	+30 47.3	2.489	3.444	163.6	4.6	17.5
1991	02 03	07 20.42	+30 49.8					
1991	02 13	07 14.28	+30 43.3	2.635	3.468	142.1	10.1	17.9
1991	02 23	07 10.27	+30 29.5					
1991	03 05	07 08.59	+30 10.1	2.871	3.490	121.3	14.1	18.2

1986 WG a,e,i = 2.41, 0.26, 22 Elements MPC 11729

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 25.61	-09 49.6	1.060	1.814	125.0	26.4	16.0
1990	12 25	08 23.47	-13 50.3					
1991	01 04	08 17.80	-17 24.6	0.956	1.791	134.9	22.9	15.6
1991	01 14	08 09.28	-20 15.4					
1991	01 24	07 59.27	-22 07.9	0.918	1.776	138.0	21.8	15.5
1991	02 03	07 49.64	-22 56.6					
1991	02 13	07 42.19	-22 45.3	0.944	1.772	133.1	24.0	15.6
1991	02 23	07 38.27	-21 45.5					
1991	03 05	07 38.55	-20 13.2	1.021	1.777	124.0	27.5	15.9

9511 P-L a,e,i = 3.16, 0.13, 1 Elements MPC 14630

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 27.36	+18 19.2	2.701	3.490	137.5	11.0	18.5
1990	12 25	08 22.63	+18 35.0					
1991	01 04	08 16.15	+18 56.4	2.532	3.475	160.6	5.4	18.1
1991	01 14	08 08.40	+19 21.4					
1991	01 24	08 00.07	+19 47.4	2.477	3.459	175.1	1.4	17.8
1991	02 03	07 51.97	+20 11.6					
1991	02 13	07 44.86	+20 32.4	2.543	3.441	151.2	7.9	18.2
1991	02 23	07 39.38	+20 48.5					
1991	03 05	07 35.92	+20 59.4	2.711	3.423	129.0	13.0	18.5

1988 RX11 a,e,i = 3.09, 0.12, 0 Elements MPC 15714

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 28.09	+19 24.3	2.254	3.053	137.6	12.6	17.1
1990	12 25	08 23.68	+19 40.7					
1991	01 04	08 17.16	+20 03.4	2.085	3.030	160.6	6.2	16.7
1991	01 14	08 09.08	+20 29.7					
1991	01 24	08 00.26	+20 56.2	2.025	3.007	175.0	1.6	16.4
1991	02 03	07 51.70	+21 20.0					
1991	02 13	07 44.33	+21 38.7	2.082	2.984	150.9	9.3	16.8
1991	02 23	07 38.91	+21 51.4					
1991	03 05	07 35.91	+21 57.7	2.237	2.961	128.8	15.1	17.1

(4420) 1936 PB a,e,i = 2.68, 0.32, 7 Elements MPC 16212

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 32.55	+20 05.9	2.729	3.511	136.7	11.1	17.3
1990	12 25	08 26.60	+20 17.2					
1991	01 04	08 18.83	+20 32.4	2.578	3.520	160.3	5.4	17.0
1991	01 14	08 09.80	+20 49.2					
1991	01 24	08 00.23	+21 04.9	2.544	3.526	174.9	1.4	16.7
1991	02 03	07 50.99	+21 17.4					
1991	02 13	07 42.85	+21 25.6	2.635	3.529	150.6	7.9	17.1
1991	02 23	07 36.45	+21 29.0					
1991	03 05	07 32.14	+21 27.7	2.831	3.529	128.0	12.8	17.5

1969 QR a,e,i = 2.22, 0.14, 7 Elements MPC 15400

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 34.50	+09 57.0	1.764	2.540	133.1	16.4	18.3
1990	12 25	08 29.00	+09 34.5					
1991	01 04	08 20.86	+09 25.6	1.613	2.540	155.4	9.3	17.9
1991	01 14	08 10.74	+09 30.5					
1991	01 24	07 59.72	+09 47.6	1.564	2.537	169.0	4.2	17.6
1991	02 03	07 49.11	+10 13.8					
1991	02 13	07 40.10	+10 45.5	1.628	2.532	150.1	11.2	18.0
1991	02 23	07 33.61	+11 18.8					
1991	03 05	07 30.12	+11 50.6	1.785	2.524	128.4	17.9	18.4

(4583) 1989 RL4 a,e,i = 2.35, 0.19, 4 Elements MPC 16865

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 33.50	+14 34.0	2.002	2.786	135.0	14.5	17.5
1990	12 25	08 27.97	+14 49.8					
1991	01 04	08 20.06	+15 16.3	1.857	2.794	158.4	7.4	17.1
1991	01 14	08 10.41	+15 51.0					
1991	01 24	08 00.00	+16 30.3	1.819	2.800	174.2	2.0	16.8
1991	02 03	07 49.97	+17 10.1					
1991	02 13	07 41.39	+17 47.2	1.900	2.803	150.7	9.9	17.3
1991	02 23	07 35.06	+18 19.2					
1991	03 05	07 31.44	+18 45.0	2.079	2.803	128.2	16.1	17.7

(4272) 1977 EG5 a,e,i = 2.37, 0.25, 9 Elements MPC 15540

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 34.60	+05 07.2	1.596	2.363	131.1	18.3	16.8
1990	12 25	08 29.16	+05 00.5					
1991	01 04	08 21.12	+05 14.4	1.502	2.418	152.7	10.8	16.5
1991	01 14	08 11.29	+05 48.6					
1991	01 24	08 00.86	+06 39.9	1.504	2.471	166.3	5.4	16.3
1991	02 03	07 51.14	+07 42.5					
1991	02 13	07 43.24	+08 50.2	1.616	2.523	150.5	11.1	16.8
1991	02 23	07 37.91	+09 57.2					
1991	03 05	07 35.49	+10 58.8	1.823	2.572	129.7	17.3	17.3

1981 ET13 a,e,i = 2.28, 0.22, 4 Elements MPC 10538

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 36.24	+18 48.1	1.604	2.408	135.5	16.6	18.2
1990	12 25	08 31.62	+18 47.3					
1991	01 04	08 23.84	+18 54.8	1.418	2.361	158.8	8.7	17.6
1991	01 14	08 13.46	+19 07.9					
1991	01 24	08 01.62	+19 22.6	1.330	2.313	175.5	1.9	17.1
1991	02 03	07 49.89	+19 34.9					
1991	02 13	07 39.81	+19 42.5	1.353	2.263	150.2	12.5	17.6
1991	02 23	07 32.62	+19 44.2					
1991	03 05	07 29.01	+19 40.0	1.464	2.213	127.5	20.8	18.0

1986 QN3 a,e,i = 2.23, 0.14, 3 Elements MPC 12127

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 38.65	+20 42.3	1.413	2.224	135.4	18.1	17.8
1990	12 25	08 33.54	+21 22.5					
1991	01 04	08 25.16	+22 12.0	1.311	2.257	159.1	9.0	17.4
1991	01 14	08 14.39	+23 04.2					
1991	01 24	08 02.67	+23 52.0	1.308	2.289	173.9	2.6	17.1
1991	02 03	07 51.69	+24 29.4					
1991	02 13	07 42.87	+24 54.1	1.413	2.320	149.8	12.3	17.7
1991	02 23	07 37.19	+25 06.0					
1991	03 05	07 35.03	+25 07.0	1.606	2.350	128.0	19.4	18.2

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

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 29.37	-06 54.3	2.790	3.462	126.0	13.3	18.6
1990	12 25	08 24.96	-07 32.2					
1991	01 04	08 18.95	-07 52.8	2.636	3.472	143.0	9.8	18.4
1991	01 14	08 11.81	-07 54.1					
1991	01 24	08 04.13	-07 35.4	2.577	3.481	152.6	7.5	18.2
1991	02 03	07 56.65	-06 58.2					
1991	02 13	07 50.02	-06 05.8	2.627	3.488	145.8	9.2	18.3
1991	02 23	07 44.83	-05 02.7					
1991	03 05	07 41.45	-03 54.0	2.777	3.495	129.7	12.6	18.6

(4319) 1981 ER14 a,e,i = 2.34, 0.22, 9 Elements MPC 15684

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 41.98	+25 16.9	2.054	2.841	135.5	14.1	18.3
1990	12 25	08 35.64	+25 36.4					
1991	01 04	08 26.67	+25 57.7	1.911	2.851	158.8	7.2	17.9
1991	01 14	08 15.78	+26 16.3					
1991	01 24	08 04.03	+26 27.7	1.878	2.857	172.0	2.7	17.7
1991	02 03	07 52.71	+26 29.1					
1991	02 13	07 42.98	+26 20.2	1.965	2.859	149.4	10.1	18.1
1991	02 23	07 35.69	+26 02.2					
1991	03 05	07 31.29	+25 37.3	2.149	2.859	127.1	16.1	18.5

(4484) 1987 DD a,e,i = 2.63, 0.10, 30 Elements MPC 16412

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 43.34	+37 40.7	1.579	2.384	135.6	16.8	16.0
1990	12 25	08 39.86	+40 51.5					
1991	01 04	08 32.42	+44 01.3	1.488	2.394	150.8	11.6	15.7
1991	01 14	08 21.51	+46 53.4					
1991	01 24	08 08.44	+49 11.9	1.502	2.407	150.2	11.7	15.7
1991	02 03	07 55.28	+50 47.9					
1991	02 13	07 44.16	+51 40.8	1.617	2.420	135.3	16.7	16.0
1991	02 23	07 36.75	+51 56.7					
1991	03 05	07 33.83	+51 44.7	1.803	2.436	118.4	21.0	16.4

(4284) 1988 FL3 a,e,i = 2.40, 0.27, 12 Elements MPC 15544

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 40.69	+12 19.3	2.288	3.042	132.6	13.8	17.0
1990	12 25	08 35.60	+12 49.1					
1991	01 04	08 28.34	+13 31.2	2.125	3.050	155.9	7.6	16.6
1991	01 14	08 19.40	+14 23.3					
1991	01 24	08 09.59	+15 21.6	2.072	3.054	175.1	1.6	16.3
1991	02 03	07 59.89	+16 21.6					
1991	02 13	07 51.25	+17 19.0	2.142	3.055	153.1	8.4	16.7
1991	02 23	07 44.46	+18 10.9					
1991	03 05	07 40.02	+18 55.2	2.317	3.053	130.2	14.4	17.1

(4318) Bata a,e,i = 3.22, 0.11, 10 Elements MPC 15683

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 39.68	+31 46.9	2.098	2.893	136.5	13.5	16.3
1990	12 25	08 35.80	+32 38.6					
1991	01 04	08 29.34	+33 29.9	1.956	2.885	156.6	7.8	15.9
1991	01 14	08 20.86	+34 14.6					
1991	01 24	08 11.34	+34 46.6	1.917	2.878	164.6	5.2	15.8
1991	02 03	08 01.99	+35 01.9					
1991	02 13	07 53.96	+34 59.7	1.989	2.873	147.7	10.6	16.1
1991	02 23	07 48.18	+34 41.5					
1991	03 05	07 45.16	+34 10.6	2.154	2.869	127.6	15.9	16.4

1989 SG5 a,e,i = 2.43, 0.15, 6 Elements MPC 16235

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 41.46	+12 35.4	1.713	2.486	132.5	17.0	17.7
1990	12 25	08 38.15	+12 46.0					
1991	01 04	08 32.02	+13 12.0	1.528	2.454	154.9	9.8	17.2
1991	01 14	08 23.52	+13 52.1					
1991	01 24	08 13.58	+14 42.7	1.440	2.422	174.9	2.1	16.7
1991	02 03	08 03.48	+15 38.5					
1991	02 13	07 54.56	+16 33.9	1.463	2.390	153.9	10.5	17.1
1991	02 23	07 47.96	+17 24.3					
1991	03 05	07 44.41	+18 06.8	1.581	2.357	131.4	18.4	17.5

1988 JV a,e,i = 2.62, 0.15, 15 Elements MPC 15251

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 44.98	+25 46.8	1.579	2.378	134.9	17.0	15.2
1990	12 25	08 41.67	+27 27.7					
1991	01 04	08 35.17	+29 16.2	1.473	2.407	156.6	9.4	14.8
1991	01 14	08 26.11	+31 02.8					
1991	01 24	08 15.68	+32 36.7	1.468	2.437	166.8	5.3	14.6
1991	02 03	08 05.41	+33 49.5					
1991	02 13	07 56.75	+34 37.8	1.573	2.468	148.4	12.1	15.1
1991	02 23	07 50.84	+35 02.5					
1991	03 05	07 48.24	+35 07.4	1.765	2.500	127.9	18.3	15.6

1978 VP11 a,e,i = 3.17, 0.17, 3 Elements MPC 15552

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 43.71	+19 43.6	2.665	3.423	134.1	11.9	18.4
1990	12 25	08 39.40	+20 09.4					
1991	01 04	08 33.22	+20 40.9	2.523	3.450	157.0	6.4	18.1
1991	01 14	08 25.64	+21 15.2					
1991	01 24	08 17.33	+21 49.1	2.492	3.476	177.6	0.7	17.8
1991	02 03	08 09.11	+22 19.4					
1991	02 13	08 01.74	+22 43.9	2.583	3.500	154.6	7.0	18.2
1991	02 23	07 55.89	+23 01.5					
1991	03 05	07 51.97	+23 12.0	2.780	3.524	132.2	12.0	18.6

1982 QK3 a,e,i = 2.35, 0.19, 2 Elements MPC 13593

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 52.62	+19 33.7	1.767	2.533	132.0	16.8	18.0
1990	12 25	08 47.73	+19 51.2					
1991	01 04	08 39.95	+20 17.0	1.640	2.567	155.4	9.2	17.7
1991	01 14	08 29.95	+20 47.2					
1991	01 24	08 18.80	+21 16.8	1.615	2.599	178.2	0.7	17.2
1991	02 03	08 07.85	+21 41.2					
1991	02 13	07 58.36	+21 57.8	1.705	2.629	154.0	9.5	17.8
1991	02 23	07 51.29	+22 05.7					
1991	03 05	07 47.15	+22 05.4	1.895	2.656	131.3	16.3	18.3

1981 DF2 a,e,i = 2.32, 0.20, 7 Elements MPC 14782

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 52.58	+10 34.6	1.474	2.231	129.2	20.0	18.0
1990	12 25	08 48.07	+10 00.6					
1991	01 04	08 40.45	+09 42.2	1.365	2.278	151.5	11.9	17.6
1991	01 14	08 30.46	+09 39.6					
1991	01 24	08 19.29	+09 50.8	1.347	2.324	170.3	4.1	17.3
1991	02 03	08 08.45	+10 12.1					
1991	02 13	07 59.27	+10 39.1	1.438	2.368	154.7	10.3	17.7
1991	02 23	07 52.74	+11 07.5					
1991	03 05	07 49.34	+11 33.8	1.623	2.412	133.1	17.5	18.3

1989 UL5 a,e,i = 3.18, 0.14, 10 Elements MPC 16237

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 48.14	+32 41.4	1.957	2.741	134.8	14.8	15.9
1990	12 25	08 44.84	+33 30.6					
1991	01 04	08 38.68	+34 19.2	1.815	2.735	154.5	8.9	15.5
1991	01 14	08 30.21	+35 00.6					
1991	01 24	08 20.44	+35 27.9	1.772	2.732	164.0	5.7	15.3
1991	02 03	08 10.69	+35 36.8					
1991	02 13	08 02.22	+35 26.3	1.838	2.731	148.8	10.8	15.6
1991	02 23	07 56.07	+34 58.3					
1991	03 05	07 52.81	+34 16.6	1.996	2.732	129.0	16.4	16.0

1987 DH6 a,e,i = 2.69, 0.12, 1 Elements MPC 13307

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 48.67	+16 47.5	2.224	2.975	132.2	14.2	16.8
1990	12 25	08 44.64	+16 57.2					
1991	01 04	08 38.29	+17 15.5	2.044	2.965	155.0	8.0	16.4
1991	01 14	08 30.05	+17 40.4					
1991	01 24	08 20.69	+18 08.7	1.969	2.953	178.6	0.5	15.9
1991	02 03	08 11.22	+18 36.6					
1991	02 13	08 02.65	+19 01.2	2.012	2.940	155.6	8.0	16.4
1991	02 23	07 55.83	+19 20.5					
1991	03 05	07 51.37	+19 33.4	2.160	2.925	132.8	14.4	16.7

7633 P-L a,e,i = 2.84, 0.06, 3 Elements MPC 7374

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 47.92	+18 25.7	2.233	2.990	132.8	14.0	18.3
1990	12 25	08 44.15	+18 51.0					
1991	01 04	08 38.09	+19 24.9	2.070	2.993	155.6	7.8	17.9
1991	01 14	08 30.22	+20 04.1					
1991	01 24	08 21.29	+20 44.7	2.011	2.995	178.8	0.4	17.5
1991	02 03	08 12.29	+21 22.4					
1991	02 13	08 04.19	+21 54.0	2.071	2.997	155.4	7.9	18.0
1991	02 23	07 57.84	+22 17.7					
1991	03 05	07 53.80	+22 32.9	2.235	2.998	132.8	14.1	18.3

1985 VC1 a,e,i = 2.67, 0.18, 14 Elements MPC 14196

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 56.38	+37 56.8	1.722	2.499	133.0	16.7	17.0
1990	12 25	08 52.10	+39 21.3					
1991	01 04	08 44.26	+40 40.9	1.632	2.536	150.9	10.9	16.7
1991	01 14	08 33.59	+41 45.3					
1991	01 24	08 21.44	+42 25.5	1.638	2.574	157.1	8.6	16.6
1991	02 03	08 09.56	+42 36.6					
1991	02 13	07 59.54	+42 19.8	1.748	2.611	143.9	12.9	17.0
1991	02 23	07 52.52	+41 39.9					
1991	03 05	07 49.01	+40 43.6	1.944	2.648	125.7	17.7	17.4

1978 VS5 a,e,i = 2.44, 0.16, 2 Elements MPC 12579

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 50.45	+15 22.4	1.893	2.648	131.3	16.2	17.8
1990	12 25	08 46.85	+15 26.6					
1991	01 04	08 40.50	+15 42.0	1.701	2.620	154.0	9.5	17.3
1991	01 14	08 31.84	+16 07.0					
1991	01 24	08 21.69	+16 38.1	1.608	2.591	177.1	1.1	16.7
1991	02 03	08 11.25	+17 11.0					
1991	02 13	08 01.77	+17 41.8	1.629	2.561	155.6	9.2	17.1
1991	02 23	07 54.36	+18 07.6					
1991	03 05	07 49.74	+18 26.6	1.750	2.529	132.6	16.8	17.5

(4372) 1984 TB a,e,i = 2.93, 0.12, 2 Elements MPC 16857

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 50.11	+19 50.3	2.092	2.852	132.6	14.7	17.5
1990	12 25	08 46.29	+20 09.9					
1991	01 04	08 40.08	+20 36.8	1.954	2.877	155.4	8.2	17.1
1991	01 14	08 31.99	+21 07.6					
1991	01 24	08 22.88	+21 38.3	1.918	2.902	177.8	0.7	16.7
1991	02 03	08 13.79	+22 04.8					
1991	02 13	08 05.74	+22 24.4	2.000	2.927	155.6	8.0	17.2
1991	02 23	07 59.57	+22 36.0					
1991	03 05	07 55.79	+22 39.4	2.183	2.952	133.2	14.2	17.7

1989 UT5 a,e,i = 2.58, 0.22, 13 Elements MPC 16237

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 50.90	-00 02.4	2.390	3.063	125.1	15.2	18.1
1990	12 25	08 46.77	-00 26.6					
1991	01 04	08 40.57	-00 34.2	2.224	3.082	145.2	10.5	17.8
1991	01 14	08 32.74	-00 23.7					
1991	01 24	08 23.96	+00 04.8	2.153	3.099	160.6	6.1	17.5
1991	02 03	08 15.09	+00 49.0					
1991	02 13	08 06.98	+01 45.0	2.197	3.112	153.6	8.1	17.7
1991	02 23	08 00.39	+02 47.9					
1991	03 05	07 55.84	+03 52.6	2.348	3.124	134.4	13.1	18.0

1982 UP6 a,e,i = 2.33, 0.16, 24 Elements MPC 13167

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 51.32	-14 31.4	1.966	2.569	117.2	19.9	17.4
1990	12 25	08 48.07	-16 16.7					
1991	01 04	08 42.17	-17 40.3	1.780	2.542	131.7	16.8	17.1
1991	01 14	08 33.96	-18 34.7					
1991	01 24	08 24.19	-18 53.5	1.667	2.514	141.6	14.1	16.8
1991	02 03	08 13.96	-18 33.8					
1991	02 13	08 04.47	-17 37.6	1.641	2.483	140.4	14.7	16.8
1991	02 23	07 56.84	-16 11.5					
1991	03 05	07 51.87	-14 25.4	1.701	2.451	129.2	18.3	16.9

1989 SH a,e,i = 3.02, 0.12, 10 Elements MPC 15564

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 54.29	+26 29.0	2.283	3.040	132.9	13.7	16.4
1990	12 25	08 49.82	+26 47.7					
1991	01 04	08 42.95	+27 08.4	2.143	3.063	155.1	7.8	16.1
1991	01 14	08 34.23	+27 27.0					
1991	01 24	08 24.50	+27 39.3	2.109	3.086	171.8	2.6	15.8
1991	02 03	08 14.82	+27 42.1					
1991	02 13	08 06.19	+27 34.5	2.193	3.109	153.7	8.1	16.2
1991	02 23	07 59.43	+27 16.9					
1991	03 05	07 55.04	+26 51.1	2.380	3.131	132.0	13.6	16.5

1981 EB28 a,e,i = 2.29, 0.16, 2 Elements MPC 8288

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 54.15	+16 10.8	1.756	2.512	130.7	17.3	18.5
1990	12 25	08 50.93	+16 26.9					
1991	01 04	08 44.73	+16 56.0	1.564	2.483	153.5	10.2	18.0
1991	01 14	08 35.91	+17 35.6					
1991	01 24	08 25.35	+18 21.2	1.468	2.453	178.4	0.6	17.4
1991	02 03	08 14.33	+19 07.0					
1991	02 13	08 04.25	+19 48.0	1.486	2.420	155.8	9.6	17.8
1991	02 23	07 56.37	+20 20.6					
1991	03 05	07 51.51	+20 43.5	1.601	2.386	132.6	17.8	18.2

1989 TP1 a,e,i = 3.23, 0.15, 1 Elements MPC 15566

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 50.32	+16 36.0	2.317	3.062	131.7	13.9	16.9
1990	12 25	08 46.75	+16 48.4					
1991	01 04	08 41.07	+17 09.2	2.175	3.091	154.4	7.9	16.5
1991	01 14	08 33.74	+17 36.2					
1991	01 24	08 25.48	+18 06.2	2.137	3.121	178.2	0.6	16.1
1991	02 03	08 17.21	+18 35.7					
1991	02 13	08 09.78	+19 01.9	2.217	3.151	157.3	7.0	16.6
1991	02 23	08 03.95	+19 22.8					
1991	03 05	08 00.19	+19 37.3	2.403	3.181	134.8	12.8	17.0

6564 P-L a,e,i = 3.19, 0.15, 3 Elements MPC 16036

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 51.14	+17 18.3	2.870	3.601	131.7	11.8	18.1
1990	12 25	08 47.34	+17 37.5					
1991	01 04	08 41.74	+18 03.6	2.700	3.612	154.5	6.7	17.8
1991	01 14	08 34.72	+18 34.5					
1991	01 24	08 26.86	+19 07.4	2.639	3.623	178.5	0.4	17.4
1991	02 03	08 18.89	+19 39.3					
1991	02 13	08 11.53	+20 07.6	2.701	3.632	157.5	6.0	17.8
1991	02 23	08 05.43	+20 30.7					
1991	03 05	08 01.06	+20 47.6	2.873	3.640	134.8	11.1	18.1

1989 QG a,e,i = 2.43, 0.07, 8 Elements MPC 15420

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 54.25	+07 43.2	1.783	2.509	127.8	18.1	17.0
1990	12 25	08 51.18	+07 39.1					
1991	01 04	08 45.40	+07 52.6	1.626	2.522	149.5	11.4	16.6
1991	01 14	08 37.39	+08 23.6					
1991	01 24	08 27.98	+09 10.0	1.560	2.535	169.5	4.1	16.2
1991	02 03	08 18.36	+10 06.9					
1991	02 13	08 09.70	+11 08.7	1.607	2.546	157.3	8.6	16.5
1991	02 23	08 03.03	+12 09.6					
1991	03 05	07 59.01	+13 05.3	1.754	2.557	135.3	15.8	16.9

1981 EY35 a,e,i = 2.28, 0.14, 4 Elements MPC 10542

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 58.38	+22 41.9	1.646	2.412	131.4	17.8	18.3
1990	12 25	08 55.38	+23 07.5					
1991	01 04	08 49.05	+23 41.9	1.461	2.383	153.7	10.5	17.8
1991	01 14	08 39.76	+24 20.4					
1991	01 24	08 28.47	+24 56.2	1.372	2.353	174.3	2.4	17.3
1991	02 03	08 16.64	+25 22.8					
1991	02 13	08 05.87	+25 36.1	1.392	2.322	154.5	10.5	17.6
1991	02 23	07 57.58	+25 35.3					
1991	03 05	07 52.63	+25 21.8	1.506	2.290	131.8	18.8	18.0

1986 WO1 a,e,i = 2.40, 0.22, 2 Elements MPC 11733

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 01.35	+20 39.4	1.448	2.215	130.3	19.8	17.9
1990	12 25	08 57.77	+21 04.4					
1991	01 04	08 50.77	+21 39.5	1.345	2.266	153.1	11.3	17.5
1991	01 14	08 41.03	+22 19.2					
1991	01 24	08 29.78	+22 56.7	1.333	2.316	176.0	1.7	17.1
1991	02 03	08 18.63	+23 25.9					
1991	02 13	08 09.05	+23 43.4	1.431	2.366	155.9	9.8	17.7
1991	02 23	08 02.16	+23 48.6					
1991	03 05	07 58.52	+23 42.9	1.623	2.416	133.5	17.3	18.3

6555 P-L a,e,i = 2.84, 0.01, 3 Elements MPC 15727

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 54.81	+16 48.5	2.080	2.823	130.8	15.3	17.6
1990	12 25	08 51.89	+17 08.4					
1991	01 04	08 46.51	+17 38.7	1.909	2.822	153.3	9.0	17.2
1991	01 14	08 39.09	+18 17.0					
1991	01 24	08 30.37	+18 59.1	1.837	2.821	177.7	0.8	16.7
1991	02 03	08 21.37	+19 40.4					
1991	02 13	08 13.14	+20 17.0	1.881	2.820	157.8	7.6	17.1
1991	02 23	08 06.62	+20 46.0					
1991	03 05	08 02.45	+21 06.3	2.029	2.819	135.0	14.4	17.5

1988 LB a,e,i = 2.55, 0.13, 12 Elements MPC 13470

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 00.73	+10 01.3	2.165	2.869	127.2	15.9	17.7
1990	12 25	08 56.83	+09 25.1					
1991	01 04	08 50.47	+08 59.3	1.972	2.859	149.0	10.2	17.3
1991	01 14	08 42.04	+08 44.4					
1991	01 24	08 32.25	+08 40.2	1.876	2.849	168.8	3.8	17.0
1991	02 03	08 22.11	+08 44.9					
1991	02 13	08 12.66	+08 56.3	1.898	2.836	157.6	7.6	17.1
1991	02 23	08 04.86	+09 11.4					
1991	03 05	07 59.37	+09 27.3	2.027	2.821	135.6	14.2	17.5

1987 DG6 a,e,i = 2.67, 0.16, 1 Elements MPC 17018

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 59.08	+17 04.4	2.281	3.008	129.9	14.5	18.4
1990	12 25	08 55.64	+17 15.5					
1991	01 04	08 49.81	+17 35.8	2.082	2.988	152.5	8.7	18.0
1991	01 14	08 41.95	+18 02.9					
1991	01 24	08 32.73	+18 33.7	1.983	2.967	177.0	1.0	17.5
1991	02 03	08 23.10	+19 04.1					
1991	02 13	08 14.08	+19 30.9	2.004	2.943	158.2	7.2	17.8
1991	02 23	08 06.62	+19 51.5					
1991	03 05	08 01.40	+20 04.9	2.132	2.918	135.0	13.9	18.2

1985 SR a,e,i = 2.39, 0.19, 3 Elements MPC 14021

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 02.50	+20 51.9	2.113	2.848	130.0	15.3	18.6
1990	12 25	08 58.69	+21 21.1					
1991	01 04	08 52.18	+21 58.8	1.929	2.839	152.8	9.1	18.2
1991	01 14	08 43.38	+22 41.2					
1991	01 24	08 33.04	+23 22.9	1.846	2.828	175.2	1.7	17.8
1991	02 03	08 22.28	+23 58.8					
1991	02 13	08 12.27	+24 25.3	1.882	2.814	156.3	8.1	18.1
1991	02 23	08 04.08	+24 40.6					
1991	03 05	07 58.45	+24 44.9	2.023	2.797	133.3	15.0	18.5

1989 VM a,e,i = 3.16, 0.06, 12 Elements MPC 15569

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 54.39	+02 03.1	2.433	3.108	125.3	15.0	16.6
1990	12 25	08 51.49	+01 35.7					
1991	01 04	08 46.60	+01 23.2	2.259	3.119	145.4	10.3	16.3
1991	01 14	08 40.08	+01 26.8					
1991	01 24	08 32.55	+01 46.6	2.179	3.130	162.0	5.6	16.1
1991	02 03	08 24.78	+02 20.6					
1991	02 13	08 17.58	+03 05.5	2.210	3.141	156.5	7.2	16.2
1991	02 23	08 11.69	+03 57.0					
1991	03 05	08 07.64	+04 50.5	2.349	3.152	137.5	12.3	16.5

4265 T-2 a,e,i = 3.01, 0.11, 11 Elements MPC 15572

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 02.92	+31 55.6	2.495	3.234	131.6	13.2	17.2
1990	12 25	08 59.06	+32 46.0					
1991	01 04	08 52.74	+33 37.3	2.348	3.248	151.9	8.2	16.9
1991	01 14	08 44.41	+34 23.9					
1991	01 24	08 34.81	+34 59.9	2.304	3.262	164.2	4.7	16.7
1991	02 03	08 24.96	+35 21.1					
1991	02 13	08 15.90	+35 25.8	2.376	3.275	150.9	8.4	17.0
1991	02 23	08 08.52	+35 14.6					
1991	03 05	08 03.43	+34 49.9	2.551	3.286	130.8	13.2	17.3

2570 P-L a,e,i = 3.17, 0.12, 6 Elements MPC 12698

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 56.08	+10 56.8	2.577	3.282	128.6	13.6	18.3
1990	12 25	08 53.27	+10 59.8					
1991	01 04	08 48.46	+11 14.0	2.369	3.261	150.5	8.5	18.0
1991	01 14	08 41.98	+11 38.6					
1991	01 24	08 34.38	+12 11.8	2.262	3.239	172.0	2.4	17.6
1991	02 03	08 26.41	+12 50.7					
1991	02 13	08 18.88	+13 31.8	2.273	3.217	159.8	6.1	17.7
1991	02 23	08 12.57	+14 11.8					
1991	03 05	08 08.07	+14 48.0	2.394	3.195	137.4	12.1	18.1

1981 EZ46 a,e,i = 3.03, 0.38, 2 Elements MPC 14016

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 02.92	+19 58.4	1.496	2.256	129.7	19.6	18.0
1990	12 25	08 59.95	+20 24.0					
1991	01 04	08 53.79	+20 59.8	1.417	2.333	152.3	11.3	17.7
1991	01 14	08 45.15	+21 40.5					
1991	01 24	08 35.18	+22 19.7	1.430	2.412	175.6	1.8	17.4
1991	02 03	08 25.32	+22 51.7					
1991	02 13	08 16.86	+23 13.1	1.551	2.493	157.7	8.6	18.0
1991	02 23	08 10.77	+23 22.9					
1991	03 05	08 07.56	+23 21.8	1.771	2.575	135.6	15.6	18.5

1988 PR1 a,e,i = 2.86, 0.16, 12 Elements MPC 13681

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	08 58.02	+05 45.0	2.500	3.181	126.1	14.5	17.7
1990	12 25	08 55.16	+05 46.8					
1991	01 04	08 50.24	+06 03.1	2.287	3.160	147.5	9.6	17.3
1991	01 14	08 43.56	+06 34.2					
1991	01 24	08 35.67	+07 19.0	2.170	3.138	167.3	4.0	17.0
1991	02 03	08 27.35	+08 14.3					
1991	02 13	08 19.45	+09 16.1	2.172	3.115	159.3	6.4	17.1
1991	02 23	08 12.76	+10 19.7					
1991	03 05	08 07.93	+11 20.9	2.284	3.090	137.6	12.5	17.4

1985 SX2 a,e,i = 2.62, 0.14, 4 Elements MPC 14194

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 07.74	+19 01.3	1.737	2.472	128.4	18.2	18.0
1990	12 25	09 04.99	+19 07.4					
1991	01 04	08 59.24	+19 23.3	1.597	2.501	150.8	11.1	17.6
1991	01 14	08 50.96	+19 45.8					
1991	01 24	08 41.07	+20 10.3	1.549	2.531	175.2	1.9	17.2
1991	02 03	08 30.81	+20 31.7					
1991	02 13	08 21.47	+20 46.7	1.612	2.561	159.5	7.7	17.6
1991	02 23	08 14.16	+20 53.3					
1991	03 05	08 09.57	+20 51.3	1.778	2.591	136.7	15.2	18.1

1981 JG a,e,i = 3.16, 0.06, 17 Elements MPC 15553

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 01.59	-04 32.8	2.594	3.208	120.6	15.3	16.8
1990	12 25	08 58.82	-05 24.8					
1991	01 04	08 54.11	-06 01.2	2.412	3.219	138.9	11.6	16.6
1991	01 14	08 47.77	-06 19.2					
1991	01 24	08 40.33	-06 17.2	2.317	3.229	153.8	7.7	16.4
1991	02 03	08 32.54	-05 55.7					
1991	02 13	08 25.14	-05 17.0	2.328	3.239	153.0	8.0	16.4
1991	02 23	08 18.88	-04 25.4					
1991	03 05	08 14.32	-03 26.1	2.445	3.249	137.8	11.8	16.6

1971 UK a,e,i = 2.37, 0.17, 5 Elements MPC 10938

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 09.24	+09 00.4	1.961	2.650	124.9	17.8	18.4
1990	12 25	09 06.05	+08 47.3					
1991	01 04	09 00.18	+08 48.9	1.795	2.673	146.8	11.6	18.0
1991	01 14	08 52.03	+09 05.1					
1991	01 24	08 42.35	+09 34.1	1.721	2.693	168.8	4.1	17.7
1991	02 03	08 32.21	+10 12.3					
1991	02 13	08 22.72	+10 55.3	1.761	2.712	160.4	7.0	17.9
1991	02 23	08 14.91	+11 38.4					
1991	03 05	08 09.50	+12 17.9	1.909	2.728	138.0	14.1	18.3

1989 TR11 a,e,i = 2.65, 0.20, 13 Elements MPC 15896

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 20.12	+32 48.6	2.277	2.986	128.1	15.0	18.4
1990	12 25	09 16.39	+33 41.3					
1991	01 04	09 09.79	+34 35.7	2.132	3.013	148.3	9.9	18.1
1991	01 14	09 00.68	+35 25.3					
1991	01 24	08 49.89	+36 02.8	2.085	3.038	162.3	5.7	17.9
1991	02 03	08 38.56	+36 22.9					
1991	02 13	08 27.91	+36 23.1	2.154	3.061	152.0	8.7	18.1
1991	02 23	08 19.04	+36 04.5					
1991	03 05	08 12.69	+35 30.1	2.326	3.081	132.2	13.8	18.5

1978 PX2 a,e,i = 2.39, 0.20, 2 Elements MPC 8797

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 20.03	+17 48.7	1.867	2.565	125.3	18.3	18.7
1990	12 25	09 17.17	+18 03.5					
1991	01 04	09 11.35	+18 29.5	1.717	2.602	147.8	11.6	18.4
1991	01 14	09 02.95	+19 03.8					
1991	01 24	08 52.75	+19 41.3	1.658	2.637	172.5	2.8	18.0
1991	02 03	08 41.91	+20 16.5					
1991	02 13	08 31.70	+20 45.0	1.714	2.670	161.8	6.6	18.2
1991	02 23	08 23.25	+21 04.0					
1991	03 05	08 17.33	+21 12.8	1.878	2.701	138.4	14.1	18.7

1978 VJ8 a,e,i = 3.13, 0.11, 1 Elements MPC 15405

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 11.96	+15 10.5	2.662	3.341	126.3	13.7	18.9
1990	12 25	09 09.61	+15 19.2					
1991	01 04	09 05.19	+15 37.2	2.448	3.325	148.4	8.9	18.6
1991	01 14	08 58.94	+16 03.1					
1991	01 24	08 51.36	+16 34.4	2.331	3.309	172.2	2.3	18.2
1991	02 03	08 43.18	+17 07.7					
1991	02 13	08 35.19	+17 39.6	2.333	3.292	163.4	4.9	18.3
1991	02 23	08 28.20	+18 07.3					
1991	03 05	08 22.85	+18 28.8	2.449	3.274	140.3	11.2	18.6

2546 P-L a,e,i = 2.59, 0.10, 15 Elements MPC 12689

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 10.48	-03 16.2	1.742	2.383	119.3	21.1	18.5
1990	12 25	09 09.78	-03 55.0					
1991	01 04	09 06.34	-04 10.6	1.574	2.397	138.0	15.9	18.1
1991	01 14	09 00.42	-03 58.9					
1991	01 24	08 52.69	-03 18.0	1.479	2.412	155.9	9.6	17.8
1991	02 03	08 44.15	-02 09.9					
1991	02 13	08 35.96	-00 40.4	1.483	2.428	158.1	8.7	17.8
1991	02 23	08 29.26	+01 01.8					
1991	03 05	08 24.87	+02 47.0	1.589	2.445	141.5	14.6	18.2

1983 CC a,e,i = 1.93, 0.05, 25 Elements MPC 15065

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 15.66	+02 50.4	1.329	2.019	120.9	24.7	16.7
1990	12 25	09 15.61	+04 08.6					
1991	01 04	09 11.98	+06 07.4	1.148	2.022	142.9	17.1	16.1
1991	01 14	09 04.82	+08 47.8					
1991	01 24	08 54.75	+12 03.5	1.048	2.023	169.0	5.4	15.5
1991	02 03	08 43.12	+15 37.9					
1991	02 13	08 31.68	+19 09.8	1.060	2.023	162.3	8.5	15.7
1991	02 23	08 22.26	+22 19.8					
1991	03 05	08 16.24	+24 56.8	1.179	2.021	137.1	19.5	16.2

1989 SZ1 a,e,i = 2.19, 0.16, 4 Elements MPC 16030

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 17.10	+11 52.5	1.749	2.441	124.1	19.5	18.5
1990	12 25	09 15.77	+11 56.6					
1991	01 04	09 11.37	+12 17.4	1.539	2.416	145.8	13.2	18.0
1991	01 14	09 04.07	+12 54.6					
1991	01 24	08 54.45	+13 45.5	1.413	2.389	170.1	4.1	17.5
1991	02 03	08 43.60	+14 44.5					
1991	02 13	08 32.88	+15 45.0	1.398	2.360	163.1	7.0	17.5
1991	02 23	08 23.72	+16 40.7					
1991	03 05	08 17.20	+17 27.1	1.486	2.329	139.2	16.2	18.0

1986 RU2 a,e,i = 2.26, 0.15, 3 Elements MPC 15885

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 20.16	+18 39.7	1.378	2.107	125.5	22.4	16.9
1990	12 25	09 18.93	+18 46.7					
1991	01 04	09 14.00	+19 07.3	1.246	2.140	147.3	14.4	16.4
1991	01 14	09 05.71	+19 37.9					
1991	01 24	08 55.05	+20 12.5	1.195	2.174	171.9	3.6	16.0
1991	02 03	08 43.54	+20 43.6					
1991	02 13	08 32.87	+21 05.9	1.248	2.208	162.0	8.0	16.3
1991	02 23	08 24.50	+21 16.4					
1991	03 05	08 19.35	+21 15.0	1.399	2.243	138.8	16.9	16.9

1979 UD1 a,e,i = 2.90, 0.09, 3 Elements MPC 15552

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 16.20	+15 00.3	2.336	3.014	125.3	15.5	17.5
1990	12 25	09 14.05	+15 16.1					
1991	01 04	09 09.58	+15 43.2	2.154	3.030	147.4	10.1	17.1
1991	01 14	09 03.06	+16 19.5					
1991	01 24	08 55.06	+17 01.8	2.067	3.044	171.5	2.7	16.7
1991	02 03	08 46.42	+17 45.6					
1991	02 13	08 38.04	+18 26.8	2.097	3.058	163.9	5.1	16.9
1991	02 23	08 30.83	+19 01.8					
1991	03 05	08 25.49	+19 28.7	2.240	3.072	140.7	11.8	17.3

3129 T-2 a,e,i = 2.46, 0.24, 14 Elements MPC 15084

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 18.68	+02 39.6	2.290	2.911	120.1	17.0	18.4
1990	12 25	09 16.88	+02 33.6					
1991	01 04	09 12.69	+02 45.0	2.050	2.881	141.0	12.4	18.0
1991	01 14	09 06.27	+03 15.6					
1991	01 24	08 58.07	+04 05.3	1.896	2.849	162.1	6.1	17.6
1991	02 03	08 48.87	+05 11.6					
1991	02 13	08 39.63	+06 29.9	1.855	2.814	163.0	5.9	17.5
1991	02 23	08 31.35	+07 53.9					
1991	03 05	08 24.91	+09 17.1	1.928	2.776	141.9	12.7	17.8

6543 P-L a,e,i = 3.18, 0.17, 2 Elements MPC 9302

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 18.19	+17 30.5	2.981	3.643	125.6	12.7	18.7
1990	12 25	09 15.55	+17 49.5					
1991	01 04	09 11.00	+18 16.4	2.787	3.656	147.8	8.2	18.4
1991	01 14	09 04.79	+18 49.0					
1991	01 24	08 57.40	+19 24.4	2.692	3.668	171.4	2.3	18.1
1991	02 03	08 49.45	+19 59.3					
1991	02 13	08 41.66	+20 30.5	2.719	3.679	164.1	4.2	18.2
1991	02 23	08 34.74	+20 55.7					
1991	03 05	08 29.26	+21 13.6	2.863	3.688	141.1	9.7	18.6

1981 DB1 a,e,i = 3.13, 0.25, 14 Elements MPC 15703

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 18.74	-01 42.1	3.195	3.761	118.2	13.3	18.6
1990	12 25	09 16.13	-02 06.9					
1991	01 04	09 11.82	-02 18.7	2.994	3.783	138.1	10.0	18.3
1991	01 14	09 06.04	-02 16.5					
1991	01 24	08 59.21	-01 59.7	2.881	3.804	156.5	5.9	18.1
1991	02 03	08 51.87	-01 29.3					
1991	02 13	08 44.64	-00 47.6	2.882	3.823	159.6	5.2	18.1
1991	02 23	08 38.12	+00 02.2					
1991	03 05	08 32.82	+00 55.9	2.999	3.839	143.2	8.9	18.3

1988 ER2 a,e,i = 2.25, 0.09, 2 Elements MPC 16698

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 20.66	+13 38.4	1.425	2.136	123.9	22.5	17.2
1990	12 25	09 21.27	+13 19.6					
1991	01 04	09 18.43	+13 16.5	1.238	2.118	144.6	15.6	16.6
1991	01 14	09 12.24	+13 29.3					
1991	01 24	09 03.27	+13 55.7	1.128	2.101	168.4	5.4	16.1
1991	02 03	08 52.76	+14 30.5					
1991	02 13	08 42.30	+15 07.5	1.116	2.087	165.5	6.8	16.1
1991	02 23	08 33.54	+15 40.6					
1991	03 05	08 27.75	+16 05.4	1.201	2.074	141.9	17.2	16.6

1987 HW a,e,i = 2.80, 0.09, 9 Elements MPC 16233

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 25.09	+28 43.5	1.866	2.576	126.5	17.9	16.2
1990	12 25	09 24.47	+29 26.0					
1991	01 04	09 20.67	+30 15.6	1.687	2.565	146.6	12.2	15.8
1991	01 14	09 13.87	+31 06.3					
1991	01 24	09 04.71	+31 50.3	1.595	2.556	164.2	6.0	15.5
1991	02 03	08 54.34	+32 19.7					
1991	02 13	08 44.13	+32 29.6	1.609	2.548	157.1	8.7	15.6
1991	02 23	08 35.47	+32 18.4					
1991	03 05	08 29.41	+31 48.3	1.724	2.542	137.0	15.4	16.0

(4397) 1981 JS1 a,e,i = 2.31, 0.12, 5 Elements MPC 16012

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 24.91	+19 15.2	1.414	2.132	124.5	22.3	17.2
1990	12 25	09 25.61	+19 00.7					
1991	01 04	09 22.68	+18 57.5	1.227	2.111	145.3	15.4	16.7
1991	01 14	09 16.17	+19 03.9					
1991	01 24	09 06.70	+19 15.5	1.116	2.091	169.2	5.1	16.1
1991	02 03	08 55.55	+19 26.3					
1991	02 13	08 44.41	+19 31.0	1.104	2.074	165.0	7.1	16.2
1991	02 23	08 35.04	+19 26.1					
1991	03 05	08 28.78	+19 10.6	1.189	2.060	141.5	17.4	16.6

1978 UL2 a,e,i = 3.14, 0.18, 3 Elements MPC 15404

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 23.90	+14 50.3	2.366	3.023	123.5	15.8	17.5
1990	12 25	09 22.17	+15 04.2					
1991	01 04	09 18.14	+15 29.2	2.198	3.059	145.4	10.5	17.2
1991	01 14	09 12.08	+16 03.6					
1991	01 24	09 04.52	+16 44.0	2.122	3.094	169.3	3.4	16.9
1991	02 03	08 56.25	+17 26.1					
1991	02 13	08 48.14	+18 05.8	2.162	3.130	166.3	4.3	17.0
1991	02 23	08 41.06	+18 39.6					
1991	03 05	08 35.69	+19 05.4	2.316	3.165	143.1	10.8	17.4

(4316) 1979 TZ1 a,e,i = 2.90, 0.02, 1 Elements MPC 15683

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 24.45	+16 18.1	2.178	2.846	123.8	16.7	17.1
1990	12 25	09 23.26	+16 23.9					
1991	01 04	09 19.54	+16 40.7	1.979	2.844	145.4	11.3	16.8
1991	01 14	09 13.49	+17 06.8					
1991	01 24	09 05.62	+17 39.0	1.869	2.842	169.2	3.7	16.3
1991	02 03	08 56.79	+18 12.7					
1991	02 13	08 48.00	+18 43.7	1.872	2.840	166.1	4.8	16.4
1991	02 23	08 40.26	+19 08.4					
1991	03 05	08 34.43	+19 24.6	1.985	2.839	142.7	12.2	16.8

1986 JN1 a,e,i = 1.95, 0.06, 24 Elements MPC 10945

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 26.65	+38 23.0	1.144	1.907	127.1	24.3	17.2
1990	12 25	09 31.06	+42 07.4					
1991	01 04	09 30.67	+46 08.6	1.026	1.893	140.9	19.1	16.8
1991	01 14	09 24.73	+50 06.1					
1991	01 24	09 13.25	+53 32.9	0.989	1.880	144.5	17.7	16.7
1991	02 03	08 57.90	+56 04.3					
1991	02 13	08 41.86	+57 27.3	1.035	1.868	134.9	22.0	16.9
1991	02 23	08 28.89	+57 43.7					
1991	03 05	08 21.65	+57 06.2	1.141	1.857	120.9	27.3	17.2

1989 TC1 a,e,i = 2.47, 0.13, 1 Elements MPC 15565

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 29.73	+14 03.8	2.110	2.760	121.9	17.6	17.6
1990	12 25	09 28.10	+14 08.3					
1991	01 04	09 23.80	+14 25.5	1.913	2.768	143.8	12.1	17.3
1991	01 14	09 17.03	+14 54.3					
1991	01 24	09 08.30	+15 31.4	1.804	2.774	168.0	4.2	16.8
1991	02 03	08 58.50	+16 12.3					
1991	02 13	08 48.72	+16 52.2	1.808	2.779	166.8	4.7	16.9
1991	02 23	08 40.04	+17 26.7					
1991	03 05	08 33.36	+17 53.0	1.925	2.781	142.8	12.4	17.3

1989 WN1 a,e,i = 3.00, 0.12, 10 Elements MPC 15724

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 28.65	+26 42.8	2.551	3.222	125.4	14.4	17.8
1990	12 25	09 26.76	+27 34.0					
1991	01 04	09 22.45	+28 31.8	2.375	3.239	146.3	9.7	17.5
1991	01 14	09 15.93	+29 31.6					
1991	01 24	09 07.73	+30 27.5	2.295	3.255	164.8	4.6	17.2
1991	02 03	08 58.65	+31 13.9					
1991	02 13	08 49.64	+31 46.4	2.332	3.270	158.4	6.4	17.3
1991	02 23	08 41.63	+32 03.1					
1991	03 05	08 35.40	+32 04.2	2.478	3.283	138.0	11.7	17.7

1989 UK8 a,e,i = 3.22, 0.07, 10 Elements MPC 16878

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 25.20	+23 20.1	2.358	3.037	125.5	15.3	16.5
1990	12 25	09 24.19	+24 09.0					
1991	01 04	09 20.74	+25 06.9	2.178	3.047	146.6	10.2	16.2
1991	01 14	09 15.06	+26 09.9					
1991	01 24	09 07.64	+27 12.2	2.091	3.058	166.8	4.2	15.9
1991	02 03	08 59.28	+28 07.6					
1991	02 13	08 50.95	+28 51.2	2.119	3.069	160.8	6.1	16.0
1991	02 23	08 43.61	+29 19.9					
1991	03 05	08 38.05	+29 33.1	2.256	3.081	139.7	12.0	16.3

(4287) 1989 RU2 a,e,i = 2.21, 0.19, 5 Elements MPC 15545

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990	12 15	09 34.67	+21 38.4	1.944	2.613	122.9	18.4	17.7
1990	12 25	09 33.08	+22 17.7					
1991	01 04	09 28.38	+23 09.2	1.753	2.618	144.7	12.5	17.3
1991	01 14	09 20.73	+24 08.7					
1991	01 24	09 10.69	+25 09.5	1.651	2.620	167.2	4.8	16.8
1991	02 03	08 59.29	+26 03.5					
1991	02 13	08 47.86	+26 44.5	1.662	2.619	161.9	6.7	16.9
1991	02 23	08 37.76	+27 08.6					
1991	03 05	08 30.08	+27 15.5	1.782	2.614	139.2	14.4	17.4

(4297) 1938 HE a,e,i = 2.34, 0.19, 6 Elements MPC 15676

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 25.83	+15 57.8	1.928	2.783	143.8	12.1	16.2
1991	01 14	09 19.09	+16 49.4					
1991	01 24	09 10.27	+17 49.4	1.807	2.777	168.2	4.2	15.7
1991	02 03	09 00.25	+18 51.8					
1991	02 13	08 50.09	+19 50.6	1.801	2.769	166.2	4.9	15.8
1991	02 23	08 40.94	+20 40.4					
1991	03 05	08 33.79	+21 18.4	1.908	2.758	142.0	12.8	16.2
1991	03 15	08 29.20	+21 43.6					
1991	03 25	08 27.44	+21 56.4	2.100	2.745	120.5	18.2	16.5

1989 UR3 a,e,i = 2.65, 0.25, 3 Elements MPC 15719

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 24.90	+12 29.3	2.336	3.175	142.8	10.8	18.4
1991	01 14	09 18.36	+13 00.8					
1991	01 24	09 10.25	+13 40.6	2.235	3.201	166.8	4.0	18.1
1991	02 03	09 01.31	+14 24.9					
1991	02 13	08 52.39	+15 09.6	2.253	3.225	167.9	3.7	18.1
1991	02 23	08 44.35	+15 50.8					
1991	03 05	08 37.91	+16 25.6	2.389	3.246	144.2	10.3	18.5
1991	03 15	08 33.50	+16 52.5					
1991	03 25	08 31.37	+17 10.9	2.617	3.265	122.6	14.9	18.9

1989 UE7 a,e,i = 3.14, 0.18, 1 Elements MPC 15897

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 23.74	+14 03.3	2.470	3.314	143.6	10.1	17.6
1991	01 14	09 17.88	+14 30.5					
1991	01 24	09 10.60	+15 04.3	2.377	3.345	167.3	3.7	17.3
1991	02 03	09 02.57	+15 41.1					
1991	02 13	08 54.56	+16 17.3	2.402	3.374	168.2	3.4	17.3
1991	02 23	08 47.35	+16 49.8					
1991	03 05	08 41.61	+17 16.1	2.544	3.403	144.9	9.6	17.7
1991	03 15	08 37.73	+17 35.0					
1991	03 25	08 35.94	+17 45.9	2.778	3.431	123.5	14.0	18.1

(4545) 1989 SB11 a,e,i = 3.14, 0.14, 2 Elements MPC 16572

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	09 24.77	+18 00.6	1.835	2.697	144.6	12.2	15.7
1991 01 14	09 19.48	+18 31.0					
1991 01 24	09 12.23	+19 07.1	1.735	2.705	167.9	4.4	15.3
1991 02 03	09 03.88	+19 43.7					
1991 02 13	08 55.47	+20 15.9	1.744	2.715	167.1	4.7	15.3
1991 02 23	08 48.10	+20 39.7					
1991 03 05	08 42.64	+20 53.1	1.861	2.728	144.1	12.3	15.8
1991 03 15	08 39.60	+20 55.6					
1991 03 25	08 39.21	+20 47.7	2.063	2.742	123.5	17.7	16.2

(4356) 9522 P-L a,e,i = 2.80, 0.19, 7 Elements MPC 15697

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	09 29.14	+23 43.1	2.301	3.154	144.6	10.4	17.8
1991 01 14	09 22.68	+24 19.1					
1991 01 24	09 14.30	+24 55.7	2.161	3.127	166.5	4.2	17.4
1991 02 03	09 04.76	+25 27.5					
1991 02 13	08 55.00	+25 50.4	2.138	3.098	163.6	5.1	17.4
1991 02 23	08 46.03	+26 01.3					
1991 03 05	08 38.75	+25 59.6	2.229	3.067	141.4	11.6	17.7
1991 03 15	08 33.72	+25 46.0					
1991 03 25	08 31.26	+25 22.2	2.406	3.035	120.4	16.5	18.0

1987 GK a,e,i = 2.59, 0.17, 12 Elements MPC 15557

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	09 23.79	+02 39.6	1.533	2.362	138.6	16.0	17.0
1991 01 14	09 19.56	+03 06.5					
1991 01 24	09 12.97	+03 59.0	1.379	2.329	159.9	8.3	16.4
1991 02 03	09 04.81	+05 14.9					
1991 02 13	08 56.22	+06 48.1	1.325	2.297	166.7	5.7	16.2
1991 02 23	08 48.49	+08 29.8					
1991 03 05	08 42.80	+10 10.3	1.375	2.268	146.2	14.1	16.6
1991 03 15	08 39.92	+11 41.7					
1991 03 25	08 40.21	+12 58.7	1.508	2.241	125.6	21.2	17.0

1989 VR a,e,i = 2.90, 0.04, 2 Elements MPC 15720

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	09 26.61	+12 40.0	2.178	3.018	142.5	11.4	17.2
1991 01 14	09 21.03	+13 04.9					
1991 01 24	09 13.72	+13 39.0	2.054	3.018	166.0	4.5	16.8
1991 02 03	09 05.40	+14 18.7					
1991 02 13	08 56.92	+14 59.8	2.043	3.018	169.0	3.6	16.7
1991 02 23	08 49.22	+15 38.0					
1991 03 05	08 43.10	+16 10.3	2.147	3.017	145.5	10.7	17.1
1991 03 15	08 39.08	+16 34.5					
1991 03 25	08 37.42	+16 49.8	2.341	3.015	124.1	15.9	17.5

1988 PT a,e,i = 2.59, 0.21, 13 Elements MPC 13678

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	09 27.21	-02 41.0	1.854	2.642	134.9	15.3	17.2
1991 01 14	09 22.29	-02 47.7					
1991 01 24	09 15.22	-02 30.8	1.676	2.598	154.2	9.5	16.7
1991 02 03	09 06.70	-01 49.6					
1991 02 13	08 57.67	-00 46.3	1.596	2.553	161.7	7.0	16.5
1991 02 23	08 49.27	+00 33.4					
1991 03 05	08 42.55	+02 01.9	1.624	2.507	145.8	12.8	16.7
1991 03 15	08 38.26	+03 31.3					
1991 03 25	08 36.83	+04 54.8	1.741	2.462	125.9	19.2	17.0

1988 LA a,e,i = 2.48, 0.29, 14 Elements MPC 13470

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 31.71	+23 35.7	2.296	3.145	144.0	10.6	17.9
1991	01 14	09 25.24	+24 51.7					
1991	01 24	09 16.76	+26 10.1	2.163	3.126	165.5	4.5	17.5
1991	02 03	09 06.99	+27 24.1					
1991	02 13	08 56.87	+28 27.4	2.149	3.103	162.0	5.7	17.5
1991	02 23	08 47.45	+29 15.5					
1991	03 05	08 39.69	+29 46.7	2.250	3.076	139.9	12.0	17.8
1991	03 15	08 34.22	+30 01.6					
1991	03 25	08 31.38	+30 02.2	2.438	3.047	118.9	16.6	18.1

1985 VN a,e,i = 2.58, 0.22, 14 Elements MPC 15412

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 29.68	-04 04.8	2.226	2.990	133.5	13.8	17.8
1991	01 14	09 23.70	-04 09.7					
1991	01 24	09 16.04	-03 54.2	2.107	3.017	152.9	8.5	17.5
1991	02 03	09 07.42	-03 18.7					
1991	02 13	08 58.66	-02 26.1	2.092	3.041	160.5	6.2	17.4
1991	02 23	08 50.68	-01 21.1					
1991	03 05	08 44.22	-00 09.9	2.191	3.063	145.8	10.5	17.7
1991	03 15	08 39.78	+01 01.8					
1991	03 25	08 37.62	+02 09.0	2.385	3.082	126.3	15.1	18.1

3289 T-2 a,e,i = 2.99, 0.02, 10 Elements MPC 14969

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 26.68	+05 58.6	2.104	2.923	139.7	12.6	18.1
1991	01 14	09 21.84	+06 25.6					
1991	01 24	09 15.25	+07 08.1	1.972	2.924	161.9	6.0	17.7
1991	02 03	09 07.61	+08 03.0					
1991	02 13	08 59.76	+09 06.0	1.950	2.925	168.6	3.8	17.6
1991	02 23	08 52.61	+10 11.5					
1991	03 05	08 46.98	+11 14.3	2.043	2.926	147.2	10.6	18.0
1991	03 15	08 43.39	+12 10.3					
1991	03 25	08 42.15	+12 56.8	2.227	2.927	126.1	16.0	18.3

2151 T-2 a,e,i = 3.07, 0.33, 4 Elements MPC 15082

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 33.39	+18 39.0	1.965	2.811	142.7	12.2	18.4
1991	01 14	09 26.66	+19 09.6					
1991	01 24	09 18.11	+19 43.8	1.914	2.880	166.5	4.6	18.1
1991	02 03	09 08.66	+20 16.4					
1991	02 13	08 59.35	+20 43.3	1.976	2.948	167.7	4.1	18.2
1991	02 23	08 51.17	+21 01.4					
1991	03 05	08 44.90	+21 09.4	2.152	3.015	144.5	11.0	18.7
1991	03 15	08 40.93	+21 07.7					
1991	03 25	08 39.43	+20 57.1	2.416	3.081	123.5	15.7	19.1

(4334) 1983 RO3 a,e,i = 3.15, 0.19, 2 Elements MPC 15689

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 30.31	+16 59.8	2.045	2.892	143.0	11.8	17.3
1991	01 14	09 24.70	+17 32.9					
1991	01 24	09 17.31	+18 11.7	1.962	2.929	166.6	4.5	16.9
1991	02 03	09 08.93	+18 51.4					
1991	02 13	09 00.50	+19 27.4	1.991	2.965	168.5	3.8	17.0
1991	02 23	08 52.99	+19 56.1					
1991	03 05	08 47.17	+20 15.2	2.134	3.003	145.3	10.8	17.4
1991	03 15	08 43.52	+20 24.2					
1991	03 25	08 42.26	+20 23.3	2.365	3.040	124.3	15.7	17.8

1985 PZ1 a,e,i = 2.38, 0.15, 9 Elements MPC 14019

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 32.79	+11 09.0	1.865	2.697	140.5	13.4	17.7
1991	01 14	09 27.09	+11 56.5					
1991	01 24	09 19.17	+12 58.2	1.723	2.685	164.6	5.6	17.2
1991	02 03	09 09.83	+14 09.0					
1991	02 13	09 00.08	+15 22.5	1.693	2.671	169.7	3.8	17.1
1991	02 23	08 51.09	+16 32.0					
1991	03 05	08 43.89	+17 32.1	1.778	2.654	145.4	12.3	17.5
1991	03 15	08 39.17	+18 20.0					
1991	03 25	08 37.27	+18 54.3	1.950	2.636	123.6	18.4	17.9

1989 UM a,e,i = 2.36, 0.21, 2 Elements MPC 15566

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 36.95	+13 47.0	2.021	2.850	140.5	12.7	18.5
1991	01 14	09 30.42	+14 12.9					
1991	01 24	09 21.78	+14 48.0	1.890	2.851	164.7	5.2	18.0
1991	02 03	09 11.83	+15 27.8					
1991	02 13	09 01.55	+16 07.7	1.872	2.849	169.9	3.5	17.9
1991	02 23	08 52.06	+16 43.2					
1991	03 05	08 44.31	+17 10.9	1.970	2.844	145.5	11.4	18.4
1991	03 15	08 38.92	+17 29.4					
1991	03 25	08 36.22	+17 38.1	2.159	2.836	123.6	17.0	18.7

1984 DE1 a,e,i = 3.84, 0.14, 2 Elements MPC 12942

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 30.39	+15 26.2	2.753	3.584	142.6	9.6	18.0
1991	01 14	09 25.79	+15 45.6					
1991	01 24	09 19.73	+16 10.6	2.599	3.561	165.6	3.9	17.7
1991	02 03	09 12.76	+16 38.5					
1991	02 13	09 05.52	+17 06.1	2.560	3.538	170.6	2.6	17.5
1991	02 23	08 58.73	+17 30.5					
1991	03 05	08 53.05	+17 49.3	2.639	3.515	147.4	8.7	17.9
1991	03 15	08 48.97	+18 01.1					
1991	03 25	08 46.80	+18 05.4	2.814	3.494	126.0	13.4	18.1

1984 EN1 a,e,i = 2.33, 0.12, 2 Elements MPC 13448

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 37.26	+12 59.2	1.557	2.396	140.2	15.2	17.6
1991	01 14	09 32.12	+13 28.8					
1991	01 24	09 24.29	+14 12.5	1.409	2.370	163.9	6.6	17.1
1991	02 03	09 14.59	+15 05.1					
1991	02 13	09 04.22	+16 00.2	1.364	2.344	170.6	4.0	16.8
1991	02 23	08 54.61	+16 50.6					
1991	03 05	08 47.06	+17 31.2	1.426	2.317	146.1	13.8	17.3
1991	03 15	08 42.41	+17 59.1					
1991	03 25	08 41.06	+18 13.3	1.571	2.289	124.6	21.0	17.7

1988 RN4 a,e,i = 2.58, 0.26, 11 Elements MPC 14952

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 41.58	+21 46.9	2.033	2.868	141.5	12.3	17.5
1991	01 14	09 35.06	+22 08.4					
1991	01 24	09 26.12	+22 32.3	1.861	2.821	164.5	5.4	17.0
1991	02 03	09 15.50	+22 53.3					
1991	02 13	09 04.25	+23 06.4	1.801	2.772	167.1	4.6	16.8
1991	02 23	08 53.61	+23 08.1					
1991	03 05	08 44.72	+22 57.2	1.857	2.721	143.9	12.4	17.2
1991	03 15	08 38.36	+22 34.4					
1991	03 25	08 34.94	+22 01.3	2.000	2.669	122.2	18.4	17.5

1983 CN3 a,e,i = 2.58, 0.28, 23 Elements MPC 11736

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	09 32.78	-05 36.4	1.194	1.991	132.0	21.5	15.8
1991 01 14	09 29.28	-03 55.3					
1991 01 24	09 23.10	-01 31.1	1.110	2.041	154.0	12.2	15.4
1991 02 03	09 15.30	+01 28.6					
1991 02 13	09 07.24	+04 48.7	1.121	2.096	167.6	5.8	15.3
1991 02 23	09 00.34	+08 09.8					
1991 03 05	08 55.75	+11 14.5	1.241	2.154	149.3	13.6	15.8
1991 03 15	08 54.07	+13 51.9					
1991 03 25	08 55.49	+15 57.6	1.452	2.215	128.5	20.6	16.4

6531 P-L a,e,i = 2.20, 0.07, 5 Elements MPC 14961

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	09 43.47	+21 26.8	1.330	2.183	141.0	16.5	18.1
1991 01 14	09 37.26	+22 10.6					
1991 01 24	09 27.91	+22 58.9	1.236	2.199	164.0	7.1	17.6
1991 02 03	09 16.58	+23 42.9					
1991 02 13	09 04.86	+24 14.5	1.243	2.215	166.3	6.0	17.6
1991 02 23	08 54.46	+24 28.7					
1991 03 05	08 46.76	+24 24.6	1.352	2.230	143.7	15.3	18.1
1991 03 15	08 42.45	+24 04.4					
1991 03 25	08 41.73	+23 30.9	1.538	2.245	123.2	21.8	18.6

1989 SB a,e,i = 2.23, 0.22, 3 Elements MPC 15421

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	09 43.88	+16 42.3	1.883	2.710	139.8	13.5	18.7
1991 01 14	09 37.15	+17 15.5					
1991 01 24	09 28.03	+17 56.3	1.757	2.716	164.0	5.7	18.3
1991 02 03	09 17.37	+18 39.1					
1991 02 13	09 06.26	+19 18.2	1.742	2.720	169.8	3.7	18.2
1991 02 23	08 55.96	+19 48.8					
1991 03 05	08 47.54	+20 08.3	1.844	2.720	145.5	11.9	18.6
1991 03 15	08 41.69	+20 16.1					
1991 03 25	08 38.73	+20 12.8	2.035	2.716	123.5	17.8	19.0

1986 TL1 a,e,i = 2.26, 0.13, 4 Elements MPC 11521

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	09 43.97	+09 55.3	1.459	2.283	137.5	16.9	17.4
1991 01 14	09 37.85	+09 56.8					
1991 01 24	09 29.02	+10 13.6	1.359	2.312	161.1	7.9	17.0
1991 02 03	09 18.50	+10 42.0					
1991 02 13	09 07.60	+11 16.8	1.360	2.340	171.2	3.7	16.8
1991 02 23	08 57.78	+11 52.0					
1991 03 05	08 50.21	+12 22.6	1.468	2.367	147.8	12.9	17.4
1991 03 15	08 45.58	+12 45.6					
1991 03 25	08 44.12	+12 59.0	1.662	2.393	126.5	19.6	17.9

1978 TP6 a,e,i = 3.12, 0.20, 4 Elements MPC 12325

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	09 39.64	+16 59.4	1.713	2.552	140.9	14.1	16.6
1991 01 14	09 34.78	+17 12.3					
1991 01 24	09 27.64	+17 32.1	1.612	2.573	164.0	6.0	16.2
1991 02 03	09 19.09	+17 54.1					
1991 02 13	09 10.21	+18 13.6	1.616	2.596	171.1	3.4	16.1
1991 02 23	09 02.19	+18 26.7					
1991 03 05	08 56.00	+18 30.9	1.729	2.622	147.9	11.6	16.6
1991 03 15	08 52.26	+18 25.6					
1991 03 25	08 51.22	+18 10.8	1.929	2.651	126.9	17.5	17.0

(4456) 1989 OG a,e,i = 2.38, 0.28, 15 Elements MPC 16224

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 51.68	+30 44.5	1.988	2.813	139.9	13.0	17.8
1991	01 14	09 43.43	+31 32.4					
1991	01 24	09 32.67	+32 14.3	1.907	2.850	159.5	7.0	17.5
1991	02 03	09 20.42	+32 42.4					
1991	02 13	09 07.96	+32 51.6	1.939	2.884	159.4	6.9	17.6
1991	02 23	08 56.64	+32 40.2					
1991	03 05	08 47.52	+32 10.1	2.083	2.915	140.2	12.6	18.0
1991	03 15	08 41.20	+31 25.2					
1991	03 25	08 37.89	+30 29.6	2.313	2.942	120.0	17.1	18.4

(4321) 1981 EH26 a,e,i = 3.08, 0.28, 2 Elements MPC 15684

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 39.98	+13 45.7	2.336	3.152	139.8	11.6	18.1
1991	01 14	09 34.43	+14 19.0					
1991	01 24	09 27.21	+14 59.9	2.249	3.205	163.5	5.0	17.8
1991	02 03	09 19.00	+15 44.5					
1991	02 13	09 10.61	+16 28.3	2.275	3.256	171.9	2.4	17.7
1991	02 23	09 02.87	+17 07.4					
1991	03 05	08 56.51	+17 39.0	2.421	3.305	148.2	9.1	18.2
1991	03 15	08 52.02	+18 01.7					
1991	03 25	08 49.64	+18 14.9	2.662	3.353	126.6	13.8	18.5

1984 EY a,e,i = 2.37, 0.07, 7 Elements MPC 15708

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 44.79	+25 07.1	1.543	2.390	141.2	14.9	17.1
1991	01 14	09 39.30	+26 03.5					
1991	01 24	09 30.80	+27 01.9	1.417	2.374	162.3	7.3	16.6
1991	02 03	09 20.20	+27 53.2					
1991	02 13	09 08.87	+28 29.0	1.394	2.357	163.4	6.9	16.5
1991	02 23	08 58.42	+28 43.9					
1991	03 05	08 50.26	+28 37.1	1.474	2.341	142.5	14.9	16.9
1991	03 15	08 45.22	+28 10.9					
1991	03 25	08 43.68	+27 29.2	1.633	2.324	122.3	21.3	17.3

1981 EN17 a,e,i = 2.29, 0.17, 5 Elements MPC 15879

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 44.13	+06 29.4	1.643	2.448	136.1	16.2	17.8
1991	01 14	09 38.25	+06 42.8					
1991	01 24	09 29.93	+07 14.0	1.536	2.481	159.2	8.1	17.4
1991	02 03	09 20.08	+07 59.8					
1991	02 13	09 09.82	+08 54.7	1.533	2.512	170.7	3.6	17.2
1991	02 23	09 00.43	+09 52.3					
1991	03 05	08 52.99	+10 46.2	1.641	2.541	148.7	11.7	17.7
1991	03 15	08 48.15	+11 32.3					
1991	03 25	08 46.20	+12 07.8	1.839	2.567	127.2	18.0	18.2

9540 P-L a,e,i = 2.57, 0.13, 2 Elements MPC 15571

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 43.51	+16 49.4	1.992	2.817	139.9	13.0	17.9
1991	01 14	09 37.71	+17 22.6					
1991	01 24	09 29.76	+18 02.8	1.873	2.832	163.6	5.6	17.5
1991	02 03	09 20.41	+18 45.0					
1991	02 13	09 10.66	+19 23.9	1.866	2.845	170.6	3.2	17.4
1991	02 23	09 01.59	+19 55.0					
1991	03 05	08 54.17	+20 15.5	1.974	2.857	146.9	10.9	17.9
1991	03 15	08 49.04	+20 24.8					
1991	03 25	08 46.51	+20 23.0	2.173	2.867	125.2	16.5	18.2

(4355) 3524 P-L a,e,i = 2.57, 0.04, 14 Elements MPC 15697

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 51.96	+26 39.0	1.780	2.609	139.7	14.1	16.9
1991	01 14	09 45.50	+27 02.3					
1991	01 24	09 36.26	+27 23.7	1.650	2.601	161.0	7.1	16.5
1991	02 03	09 25.13	+27 36.3					
1991	02 13	09 13.38	+27 34.5	1.627	2.592	164.7	5.8	16.4
1991	02 23	09 02.43	+27 15.4					
1991	03 05	08 53.54	+26 39.5	1.714	2.583	144.1	13.0	16.8
1991	03 15	08 47.48	+25 49.7					
1991	03 25	08 44.59	+24 49.4	1.887	2.574	123.4	18.9	17.2

9515 P-L a,e,i = 2.58, 0.09, 4 Elements MPC 13154

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 46.86	+18 55.7	1.742	2.572	139.7	14.3	18.5
1991	01 14	09 41.59	+19 39.4					
1991	01 24	09 33.85	+20 29.7	1.635	2.592	162.8	6.4	18.1
1991	02 03	09 24.48	+21 20.0					
1991	02 13	09 14.60	+22 03.7	1.635	2.611	169.5	4.0	18.0
1991	02 23	09 05.45	+22 35.7					
1991	03 05	08 58.13	+22 53.2	1.745	2.631	146.7	11.9	18.4
1991	03 15	08 53.34	+22 56.3					
1991	03 25	08 51.39	+22 46.0	1.943	2.650	125.6	17.8	18.9

1987 GC a,e,i = 2.69, 0.11, 13 Elements MPC 11855

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 41.29	-03 35.0	1.884	2.640	131.5	16.2	17.3
1991	01 14	09 37.47	-03 42.0					
1991	01 24	09 31.45	-03 25.1	1.712	2.618	151.2	10.4	16.8
1991	02 03	09 23.85	-02 43.8					
1991	02 13	09 15.54	-01 39.9	1.634	2.595	163.2	6.3	16.6
1991	02 23	09 07.56	-00 19.0					
1991	03 05	09 00.95	+01 11.1	1.665	2.574	150.2	11.0	16.8
1991	03 15	08 56.48	+02 42.5					
1991	03 25	08 54.62	+04 08.0	1.791	2.552	130.4	17.3	17.1

1989 UY a,e,i = 3.18, 0.10, 15 Elements MPC 15567

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 42.37	-06 19.6	2.223	2.949	129.7	14.9	16.5
1991	01 14	09 37.89	-07 02.3					
1991	01 24	09 31.58	-07 25.2	2.083	2.964	147.9	10.2	16.2
1991	02 03	09 24.04	-07 26.7					
1991	02 13	09 16.03	-07 07.5	2.040	2.979	158.1	7.1	16.1
1991	02 23	09 08.44	-06 30.4					
1991	03 05	09 02.09	-05 40.8	2.105	2.996	148.5	10.0	16.3
1991	03 15	08 57.55	-04 44.4					
1991	03 25	08 55.21	-03 47.1	2.265	3.012	130.8	14.5	16.6

1989 WX a,e,i = 3.02, 0.09, 11 Elements MPC 15723

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 45.22	+26 16.5	2.469	3.293	141.2	10.8	16.1
1991	01 14	09 40.15	+27 19.2					
1991	01 24	09 33.16	+28 22.2	2.348	3.295	161.3	5.5	15.8
1991	02 03	09 24.86	+29 19.7					
1991	02 13	09 16.08	+30 06.0	2.341	3.296	162.6	5.1	15.8
1991	02 23	09 07.73	+30 37.4					
1991	03 05	09 00.68	+30 52.5	2.448	3.296	143.2	10.4	16.1
1991	03 15	08 55.54	+30 52.0					
1991	03 25	08 52.68	+30 37.7	2.646	3.295	122.9	14.7	16.4

(4313) 1979 HK1 a,e,i = 2.66, 0.01, 9 Elements MPC 15682

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 50.09	+27 26.1	1.811	2.643	140.2	13.8	16.4
1991	01 14	09 45.03	+28 29.5					
1991	01 24	09 37.30	+29 32.9	1.694	2.640	160.0	7.3	16.0
1991	02 03	09 27.70	+30 27.7					
1991	02 13	09 17.38	+31 06.5	1.682	2.638	161.8	6.7	16.0
1991	02 23	09 07.68	+31 24.6					
1991	03 05	08 59.83	+31 20.9	1.777	2.636	142.8	13.1	16.3
1991	03 15	08 54.59	+30 57.9					
1991	03 25	08 52.37	+30 19.0	1.955	2.634	123.0	18.5	16.7

1978 TV8 a,e,i = 3.16, 0.18, 2 Elements MPC 12695

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 46.22	+15 49.2	1.935	2.754	139.0	13.5	16.8
1991	01 14	09 41.76	+16 16.7					
1991	01 24	09 35.18	+16 52.4	1.829	2.782	162.1	6.2	16.5
1991	02 03	09 27.22	+17 31.4					
1991	02 13	09 18.78	+18 08.7	1.829	2.812	172.9	2.5	16.3
1991	02 23	09 10.93	+18 39.6					
1991	03 05	09 04.57	+19 01.0	1.942	2.842	149.6	10.2	16.8
1991	03 15	09 00.31	+19 11.6					
1991	03 25	08 58.48	+19 11.3	2.148	2.874	128.3	15.8	17.2

1983 TR2 a,e,i = 3.07, 0.21, 15 Elements MPC 10529

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 51.39	+32 07.1	2.886	3.693	140.0	9.9	18.2
1991	01 14	09 45.51	+32 57.7					
1991	01 24	09 37.80	+33 44.4	2.772	3.702	157.7	5.8	18.0
1991	02 03	09 28.88	+34 21.8					
1991	02 13	09 19.51	+34 45.8	2.773	3.709	158.4	5.6	18.0
1991	02 23	09 10.56	+34 53.8					
1991	03 05	09 02.82	+34 45.7	2.889	3.714	141.2	9.6	18.2
1991	03 15	08 56.87	+34 23.0					
1991	03 25	08 53.05	+33 48.2	3.097	3.718	121.6	13.2	18.5

1978 VP10 a,e,i = 2.44, 0.07, 4 Elements MPC 15551

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 52.13	+17 32.7	1.777	2.593	138.1	14.7	18.6
1991	01 14	09 47.25	+18 20.0					
1991	01 24	09 39.81	+19 16.4	1.646	2.598	161.4	7.0	18.2
1991	02 03	09 30.54	+20 15.5					
1991	02 13	09 20.48	+21 10.1	1.621	2.600	171.0	3.4	18.0
1991	02 23	09 10.90	+21 53.9					
1991	03 05	09 02.96	+22 23.2	1.708	2.602	148.0	11.7	18.5
1991	03 15	08 57.47	+22 37.1					
1991	03 25	08 54.85	+22 36.1	1.884	2.603	126.4	18.0	18.9

1979 KR a,e,i = 2.58, 0.14, 11 Elements MPC 14014

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 49.24	-02 04.0	1.946	2.693	130.7	16.1	17.4
1991	01 14	09 45.41	-02 13.0					
1991	01 24	09 39.30	-02 00.3	1.761	2.665	151.1	10.3	16.9
1991	02 03	09 31.47	-01 25.2					
1991	02 13	09 22.74	-00 29.5	1.671	2.637	164.9	5.6	16.6
1991	02 23	09 14.14	+00 42.1					
1991	03 05	09 06.75	+02 02.4	1.691	2.608	151.8	10.4	16.8
1991	03 15	09 01.38	+03 24.0					
1991	03 25	08 58.58	+04 40.2	1.808	2.578	131.3	16.9	17.1

1989 TB11 a,e,i = 2.67, 0.13, 4 Elements MPC 16236

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 54.55	+15 09.8	2.018	2.817	136.9	13.8	17.4
1991	01 14	09 49.33	+15 31.0					
1991	01 24	09 41.89	+16 00.7	1.894	2.841	160.4	6.7	17.0
1991	02 03	09 32.91	+16 34.3					
1991	02 13	09 23.32	+17 07.2	1.879	2.863	174.4	1.9	16.8
1991	02 23	09 14.18	+17 34.8					
1991	03 05	09 06.48	+17 53.8	1.980	2.884	150.4	9.8	17.2
1991	03 15	09 00.89	+18 03.0					
1991	03 25	08 57.78	+18 02.0	2.177	2.904	128.5	15.6	17.7

1980 FB a,e,i = 3.22, 0.10, 2 Elements MPC 10830

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 49.66	+15 20.8	2.483	3.281	138.1	11.5	17.7
1991	01 14	09 45.43	+15 46.4					
1991	01 24	09 39.35	+16 19.4	2.316	3.262	161.1	5.6	17.3
1991	02 03	09 31.96	+16 56.5					
1991	02 13	09 23.93	+17 33.4	2.259	3.243	174.2	1.8	17.0
1991	02 23	09 16.10	+18 06.3					
1991	03 05	09 09.28	+18 31.8	2.321	3.223	150.8	8.6	17.4
1991	03 15	09 04.10	+18 48.3					
1991	03 25	09 00.98	+18 54.8	2.482	3.204	128.9	14.0	17.7

1989 UB8 a,e,i = 3.12, 0.17, 5 Elements MPC 16585

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 50.53	+06 16.1	2.340	3.110	134.5	13.0	17.7
1991	01 14	09 46.10	+06 26.8					
1991	01 24	09 39.88	+06 50.6	2.214	3.143	157.0	7.0	17.4
1991	02 03	09 32.45	+07 25.3					
1991	02 13	09 24.53	+08 07.4	2.194	3.176	172.9	2.2	17.1
1991	02 23	09 16.95	+08 52.8					
1991	03 05	09 10.49	+09 37.0	2.293	3.209	153.1	8.0	17.5
1991	03 15	09 05.68	+10 16.6					
1991	03 25	09 02.90	+10 49.0	2.493	3.241	131.5	13.3	17.9

1986 UU a,e,i = 2.20, 0.25, 6 Elements MPC 15067

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 58.10	+03 32.3	1.885	2.642	131.6	16.2	18.3
1991	01 14	09 52.45	+03 33.2					
1991	01 24	09 44.39	+03 52.0	1.749	2.670	154.3	9.2	17.9
1991	02 03	09 34.61	+04 27.3					
1991	02 13	09 24.10	+05 15.3	1.716	2.695	170.4	3.5	17.6
1991	02 23	09 14.00	+06 10.4					
1991	03 05	09 05.39	+07 06.4	1.799	2.715	151.9	9.9	18.0
1991	03 15	08 59.01	+07 58.3					
1991	03 25	08 55.30	+08 42.1	1.981	2.731	130.0	16.2	18.4

(4404) Enirac a,e,i = 2.65, 0.31, 30 Elements MPC 16015

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	09 49.52	-00 06.2	1.496	2.272	131.7	18.9	16.3
1991	01 14	09 47.87	+01 39.7					
1991	01 24	09 43.40	+04 10.1	1.273	2.204	154.7	11.0	15.6
1991	02 03	09 36.46	+07 23.9					
1991	02 13	09 27.86	+11 11.4	1.152	2.138	175.7	2.0	15.0
1991	02 23	09 18.87	+15 14.1					
1991	03 05	09 11.05	+19 09.5	1.151	2.074	151.0	13.4	15.4
1991	03 15	09 05.72	+22 39.4					
1991	03 25	09 03.84	+25 33.1	1.249	2.015	127.2	23.2	15.8

(4328) 1982 SQ2 a,e,i = 2.30, 0.17, 6 Elements MPC 15687

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	10 00.19	+04 57.8	1.940	2.697	131.8	15.8	18.2
1991 01 14	09 55.62	+05 10.8					
1991 01 24	09 48.66	+05 41.4	1.779	2.701	154.6	9.0	17.8
1991 02 03	09 39.88	+06 27.6					
1991 02 13	09 30.15	+07 25.3	1.721	2.703	173.0	2.6	17.5
1991 02 23	09 20.57	+08 28.6					
1991 03 05	09 12.22	+09 31.0	1.779	2.703	153.5	9.4	17.9
1991 03 15	09 05.92	+10 27.4					
1991 03 25	09 02.17	+11 13.9	1.936	2.699	131.2	16.1	18.3

3067 T-2 a,e,i = 2.18, 0.07, 2 Elements MPC 14967

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	09 58.45	+12 08.0	1.290	2.104	135.0	19.3	18.0
1991 01 14	09 55.65	+12 36.0					
1991 01 24	09 49.50	+13 23.1	1.145	2.090	157.9	10.2	17.5
1991 02 03	09 40.67	+14 24.0					
1991 02 13	09 30.34	+15 30.5	1.090	2.077	176.7	1.6	17.0
1991 02 23	09 20.17	+16 32.9					
1991 03 05	09 11.80	+17 23.2	1.137	2.065	151.8	13.1	17.5
1991 03 15	09 06.40	+17 56.8					
1991 03 25	09 04.59	+18 12.1	1.266	2.054	130.0	21.8	18.0

1981 ES8 a,e,i = 3.02, 0.10, 10 Elements MPC 14187

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	09 55.72	+00 06.6	2.465	3.192	130.5	13.6	17.7
1991 01 14	09 51.79	+00 06.3					
1991 01 24	09 46.08	+00 22.3	2.307	3.207	151.7	8.4	17.4
1991 02 03	09 39.07	+00 53.6					
1991 02 13	09 31.42	+01 38.2	2.251	3.222	167.6	3.8	17.1
1991 02 23	09 23.90	+02 32.0					
1991 03 05	09 17.29	+03 30.1	2.313	3.237	154.6	7.6	17.3
1991 03 15	09 12.17	+04 27.7					
1991 03 25	09 08.96	+05 20.8	2.479	3.250	133.8	12.8	17.7

1985 UV4 a,e,i = 2.71, 0.21, 8 Elements MPC 15245

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	09 56.24	+02 45.5	1.499	2.274	131.7	18.8	16.5
1991 01 14	09 53.38	+02 58.7					
1991 01 24	09 47.88	+03 35.7	1.387	2.310	153.5	11.0	16.1
1991 02 03	09 40.45	+04 34.1					
1991 02 13	09 32.12	+05 48.1	1.368	2.349	171.6	3.5	15.8
1991 02 23	09 24.15	+07 09.6					
1991 03 05	09 17.69	+08 29.6	1.454	2.390	154.9	10.1	16.3
1991 03 15	09 13.54	+09 41.0					
1991 03 25	09 12.12	+10 39.2	1.634	2.432	133.7	17.2	16.8

1985 JU1 a,e,i = 2.20, 0.13, 5 Elements MPC 11426

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	10 03.05	+17 14.0	1.599	2.402	135.5	16.7	18.2
1991 01 14	09 59.21	+18 09.2					
1991 01 24	09 52.29	+19 17.7	1.437	2.380	158.4	8.7	17.7
1991 02 03	09 42.90	+20 32.2					
1991 02 13	09 32.05	+21 43.8	1.376	2.357	171.7	3.5	17.3
1991 02 23	09 21.21	+22 43.4					
1991 03 05	09 11.85	+23 25.0	1.424	2.332	149.3	12.5	17.8
1991 03 15	09 05.10	+23 46.6					
1991 03 25	09 01.61	+23 48.8	1.559	2.305	127.4	20.1	18.2

1939 VD a,e,i = 2.47, 0.26, 10 Elements MPC 16227

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 07.30	+25 45.6	1.903	2.700	136.2	14.6	17.5
1991	01 14	10 01.82	+26 59.3					
1991	01 24	09 53.66	+28 14.5	1.814	2.748	157.1	8.0	17.2
1991	02 03	09 43.57	+29 22.6					
1991	02 13	09 32.66	+30 15.6	1.832	2.792	163.4	5.8	17.1
1991	02 23	09 22.18	+30 48.4					
1991	03 05	09 13.32	+30 59.4	1.962	2.834	145.3	11.5	17.5
1991	03 15	09 06.85	+30 50.7					
1991	03 25	09 03.17	+30 25.4	2.182	2.873	125.0	16.5	18.0

(4473) 1981 DE2 a,e,i = 3.02, 0.04, 9 Elements MPC 16407

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 02.33	+13 12.8	2.119	2.895	134.5	14.0	17.1
1991	01 14	09 58.12	+13 10.2					
1991	01 24	09 51.68	+13 16.4	1.961	2.895	157.4	7.5	16.7
1991	02 03	09 43.58	+13 28.6					
1991	02 13	09 34.60	+13 43.5	1.908	2.895	178.2	0.6	16.3
1991	02 23	09 25.74	+13 57.2					
1991	03 05	09 17.98	+14 06.4	1.971	2.896	154.2	8.6	16.8
1991	03 15	09 12.05	+14 09.3					
1991	03 25	09 08.43	+14 04.5	2.134	2.898	132.0	14.8	17.2

1972 TE a,e,i = 2.64, 0.27, 4 Elements MPC 14342

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 04.12	+05 33.6	2.075	2.821	131.2	15.2	18.6
1991	01 14	09 59.41	+05 44.6					
1991	01 24	09 52.54	+06 11.0	1.954	2.871	154.0	8.6	18.3
1991	02 03	09 44.12	+06 50.3					
1991	02 13	09 34.98	+07 38.5	1.936	2.919	173.6	2.2	18.0
1991	02 23	09 26.10	+08 30.5					
1991	03 05	09 18.39	+09 21.1	2.036	2.964	155.0	8.1	18.4
1991	03 15	09 12.54	+10 05.9					
1991	03 25	09 08.94	+10 42.1	2.238	3.008	132.9	14.0	18.8

1989 SC1 a,e,i = 2.27, 0.17, 2 Elements MPC 15564

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 07.89	+10 17.9	1.856	2.620	132.2	16.1	17.7
1991	01 14	10 03.27	+10 34.9					
1991	01 24	09 56.04	+11 06.0	1.705	2.633	155.6	8.9	17.3
1991	02 03	09 46.80	+11 47.6					
1991	02 13	09 36.46	+12 34.8	1.656	2.643	178.2	0.7	16.8
1991	02 23	09 26.22	+13 21.6					
1991	03 05	09 17.23	+14 02.5	1.723	2.650	154.0	9.4	17.3
1991	03 15	09 10.38	+14 33.9					
1991	03 25	09 06.22	+14 53.9	1.889	2.655	131.3	16.4	17.8

(4413) 4020 P-L a,e,i = 2.37, 0.07, 2 Elements MPC 16018

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 05.07	+08 15.3	1.602	2.376	132.1	17.9	17.4
1991	01 14	10 01.43	+08 25.7					
1991	01 24	09 54.98	+08 53.8	1.464	2.392	154.9	10.1	17.0
1991	02 03	09 46.36	+09 36.5					
1991	02 13	09 36.58	+10 28.4	1.421	2.407	176.4	1.5	16.5
1991	02 23	09 26.93	+11 22.7					
1991	03 05	09 18.69	+12 12.6	1.488	2.422	154.7	10.1	17.1
1991	03 15	09 12.77	+12 53.3					
1991	03 25	09 09.74	+13 21.8	1.650	2.437	132.5	17.6	17.5

1989 SU1 a,e,i = 2.20, 0.11, 4 Elements MPC 15717

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	10 08.92	+15 04.2	1.517	2.307	133.6	18.0	17.0
1991 01 14	10 06.01	+15 47.4					
1991 01 24	09 59.91	+16 46.5	1.349	2.285	156.3	10.0	16.5
1991 02 03	09 51.11	+17 55.3					
1991 02 13	09 40.61	+19 05.5	1.277	2.262	174.7	2.3	16.0
1991 02 23	09 29.85	+20 07.5					
1991 03 05	09 20.39	+20 53.8	1.312	2.238	152.2	11.9	16.5
1991 03 15	09 13.45	+21 21.2					
1991 03 25	09 09.80	+21 29.0	1.436	2.213	130.0	20.2	16.9

(4347) Reger a,e,i = 3.06, 0.06, 1 Elements MPC 15694

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	10 06.00	+12 17.5	2.221	2.983	133.4	13.9	16.8
1991 01 14	10 02.84	+12 37.4					
1991 01 24	09 57.53	+13 08.4	2.045	2.972	156.0	7.8	16.4
1991 02 03	09 50.53	+13 47.3					
1991 02 13	09 42.51	+14 29.8	1.973	2.960	179.3	0.2	15.9
1991 02 23	09 34.38	+15 10.9					
1991 03 05	09 27.06	+15 46.2	2.017	2.949	155.8	7.9	16.4
1991 03 15	09 21.33	+16 12.6					
1991 03 25	09 17.71	+16 28.1	2.162	2.939	133.5	14.2	16.7

1986 TJ2 a,e,i = 2.27, 0.14, 6 Elements MPC 15557

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	10 08.14	+12 55.3	1.265	2.065	133.1	20.3	16.5
1991 01 14	10 06.03	+13 54.0					
1991 01 24	10 00.55	+15 12.6	1.154	2.091	155.8	11.1	16.0
1991 02 03	09 52.37	+16 43.1					
1991 02 13	09 42.70	+18 14.7	1.134	2.119	175.5	2.1	15.6
1991 02 23	09 33.10	+19 35.8					
1991 03 05	09 25.15	+20 37.9	1.216	2.149	153.4	11.9	16.2
1991 03 15	09 19.93	+21 17.6					
1991 03 25	09 17.99	+21 34.8	1.384	2.179	131.8	20.0	16.8

1980 FJ1 a,e,i = 3.24, 0.14, 17 Elements MPC 14614

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	10 11.48	+25 05.0	2.892	3.656	135.2	10.9	17.7
1991 01 14	10 06.62	+25 32.6					
1991 01 24	09 59.89	+26 01.3	2.742	3.665	156.3	6.2	17.4
1991 02 03	09 51.75	+26 26.6					
1991 02 13	09 42.86	+26 44.6	2.704	3.673	167.0	3.5	17.3
1991 02 23	09 34.00	+26 51.9					
1991 03 05	09 25.95	+26 47.1	2.787	3.680	150.1	7.7	17.5
1991 03 15	09 19.33	+26 30.2					
1991 03 25	09 14.57	+26 02.4	2.973	3.685	129.2	12.1	17.8

1985 RL1 a,e,i = 2.43, 0.17, 10 Elements MPC 13159

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	10 09.69	-02 05.9	2.108	2.805	126.3	16.4	18.1
1991 01 14	10 05.91	-02 16.6					
1991 01 24	09 59.86	-02 07.6	1.934	2.814	147.5	10.8	17.8
1991 02 03	09 51.99	-01 38.4					
1991 02 13	09 43.04	-00 50.8	1.855	2.821	165.4	5.1	17.5
1991 02 23	09 33.96	+00 11.2					
1991 03 05	09 25.76	+01 21.1	1.889	2.826	156.3	8.1	17.6
1991 03 15	09 19.24	+02 32.5					
1991 03 25	09 14.98	+03 39.4	2.029	2.828	135.5	14.3	18.0

1987 EP a,e,i = 2.63, 0.15, 15 Elements MPC 13302

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 16.70	+19 06.0	2.151	2.911	132.9	14.3	16.7
1991	01 14	10 11.52	+19 17.3					
1991	01 24	10 03.88	+19 33.8	2.004	2.929	155.7	7.9	16.3
1991	02 03	09 54.35	+19 51.2					
1991	02 13	09 43.80	+20 04.6	1.963	2.946	173.7	2.1	16.0
1991	02 23	09 33.30	+20 10.0					
1991	03 05	09 23.92	+20 05.1	2.041	2.961	153.4	8.6	16.4
1991	03 15	09 16.46	+19 49.5					
1991	03 25	09 11.43	+19 23.9	2.222	2.974	131.1	14.6	16.8

1989 VX a,e,i = 3.11, 0.16, 3 Elements MPC 15721

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 09.05	+13 58.7	2.402	3.157	133.2	13.1	18.1
1991	01 14	10 05.38	+14 29.5					
1991	01 24	09 59.73	+15 09.5	2.263	3.187	156.0	7.2	17.8
1991	02 03	09 52.57	+15 54.8					
1991	02 13	09 44.59	+16 40.9	2.230	3.217	177.0	0.9	17.4
1991	02 23	09 36.61	+17 23.0					
1991	03 05	09 29.46	+17 57.4	2.317	3.245	155.5	7.3	17.8
1991	03 15	09 23.79	+18 21.7					
1991	03 25	09 20.05	+18 34.9	2.508	3.273	133.3	12.8	18.2

1988 JP a,e,i = 2.63, 0.36, 29 Elements MPC 15712

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 21.01	+43 18.1	2.686	3.433	133.1	12.1	18.0
1991	01 14	10 15.61	+45 14.1					
1991	01 24	10 07.40	+47 02.1	2.610	3.463	144.9	9.4	17.8
1991	02 03	09 56.93	+48 32.9					
1991	02 13	09 45.13	+49 39.1	2.640	3.489	144.1	9.5	17.9
1991	02 23	09 33.22	+50 16.7					
1991	03 05	09 22.48	+50 25.6	2.772	3.512	131.8	12.2	18.1
1991	03 15	09 13.89	+50 09.0					
1991	03 25	09 08.06	+49 31.8	2.983	3.531	115.7	14.7	18.3

1968 OF a,e,i = 2.29, 0.15, 6 Elements MPC 15400

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 13.57	+01 50.8	1.874	2.591	127.4	17.5	18.2
1991	01 14	10 09.81	+01 44.0					
1991	01 24	10 03.48	+01 56.7	1.710	2.606	149.4	11.1	17.9
1991	02 03	09 55.07	+02 28.2					
1991	02 13	09 45.41	+03 15.9	1.641	2.618	169.4	4.0	17.5
1991	02 23	09 35.59	+04 14.6					
1991	03 05	09 26.77	+05 17.4	1.685	2.627	157.1	8.4	17.7
1991	03 15	09 19.85	+06 18.1					
1991	03 25	09 15.46	+07 11.4	1.831	2.634	135.2	15.5	18.2

1989 UF7 a,e,i = 2.46, 0.11, 3 Elements MPC 16434

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 12.97	+14 48.6	1.897	2.662	132.6	15.8	18.0
1991	01 14	10 09.58	+15 19.8					
1991	01 24	10 03.53	+16 03.2	1.720	2.647	155.3	8.9	17.5
1991	02 03	09 55.27	+16 54.0					
1991	02 13	09 45.62	+17 46.1	1.644	2.630	175.9	1.5	17.1
1991	02 23	09 35.70	+18 32.9					
1991	03 05	09 26.73	+19 08.8	1.682	2.612	154.4	9.5	17.5
1991	03 15	09 19.70	+19 30.9					
1991	03 25	09 15.29	+19 38.1	1.818	2.592	131.9	16.6	17.8

(4385) 2534 P-L a,e,i = 3.19, 0.17, 1 Elements MPC 15871

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 09.68	+12 07.7	2.679	3.421	132.5	12.2	17.7
1991	01 14	10 05.93	+12 30.3					
1991	01 24	10 00.38	+13 02.1	2.529	3.448	155.3	6.9	17.4
1991	02 03	09 53.47	+13 39.8					
1991	02 13	09 45.80	+14 20.1	2.486	3.473	179.0	0.3	16.9
1991	02 23	09 38.09	+14 58.7					
1991	03 05	09 31.08	+15 32.2	2.565	3.498	156.8	6.4	17.4
1991	03 15	09 25.37	+15 58.1					
1991	03 25	09 21.39	+16 15.0	2.751	3.522	134.4	11.7	17.8

1988 PH1 a,e,i = 3.21, 0.22, 20 Elements MPC 16429

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 13.14	+11 09.2	3.075	3.797	131.3	11.2	16.9
1991	01 14	10 08.35	+11 02.7					
1991	01 24	10 01.92	+11 03.3	2.905	3.816	154.2	6.4	16.7
1991	02 03	09 54.23	+11 09.1					
1991	02 13	09 45.85	+11 18.0	2.846	3.833	177.4	0.7	16.3
1991	02 23	09 37.43	+11 27.6					
1991	03 05	09 29.65	+11 35.5	2.913	3.848	157.5	5.7	16.6
1991	03 15	09 23.05	+11 40.0					
1991	03 25	09 18.04	+11 39.7	3.093	3.862	134.9	10.5	17.0

(4451) 1988 JJ a,e,i = 2.60, 0.39, 28 Elements MPC 16223

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 12.62	-22 27.4	3.095	3.607	113.9	14.4	18.6
1991	01 14	10 08.48	-23 10.7					
1991	01 24	10 02.55	-23 34.1	2.893	3.608	130.3	12.0	18.3
1991	02 03	09 55.18	-23 34.2					
1991	02 13	09 46.91	-23 09.3	2.768	3.606	143.0	9.5	18.1
1991	02 23	09 38.43	-22 19.5					
1991	03 05	09 30.49	-21 08.2	2.744	3.600	144.9	9.1	18.1
1991	03 15	09 23.71	-19 40.3					
1991	03 25	09 18.62	-18 02.6	2.823	3.591	134.3	11.5	18.2

1982 TF2 a,e,i = 2.35, 0.17, 2 Elements MPC 11053

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 16.46	+09 43.9	1.927	2.668	130.1	16.4	18.3
1991	01 14	10 12.41	+09 58.9					
1991	01 24	10 05.78	+10 28.2	1.773	2.689	153.1	9.5	17.9
1991	02 03	09 57.10	+11 08.5					
1991	02 13	09 47.20	+11 55.2	1.720	2.707	177.8	0.8	17.5
1991	02 23	09 37.18	+12 42.2					
1991	03 05	09 28.18	+13 24.2	1.784	2.723	156.7	8.3	17.9
1991	03 15	09 21.09	+13 57.3					
1991	03 25	09 16.49	+14 19.2	1.950	2.736	133.8	15.2	18.4

(4381) Uenohara a,e,i = 3.03, 0.07, 11 Elements MPC 15870

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 12.52	+18 31.6	2.474	3.232	133.7	12.7	16.5
1991	01 14	10 09.40	+19 30.5					
1991	01 24	10 04.22	+20 37.6	2.315	3.238	155.7	7.2	16.1
1991	02 03	09 57.40	+21 47.6					
1991	02 13	09 49.57	+22 54.6	2.265	3.243	170.7	2.8	15.9
1991	02 23	09 41.55	+23 52.8					
1991	03 05	09 34.20	+24 38.0	2.333	3.247	152.9	8.0	16.2
1991	03 15	09 28.24	+25 08.1					
1991	03 25	09 24.20	+25 22.9	2.504	3.251	131.5	13.3	16.5

1984 DC1 a,e,i = 2.35, 0.21, 2 Elements MPC 16425

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 17.47	+08 47.9	1.384	2.148	129.5	20.7	17.0
1991	01 14	10 14.71	+09 08.1					
1991	01 24	10 08.74	+09 48.3	1.276	2.195	152.2	12.1	16.6
1991	02 03	10 00.22	+10 44.1					
1991	02 13	09 50.26	+11 48.3	1.256	2.243	177.2	1.2	16.1
1991	02 23	09 40.30	+12 52.3					
1991	03 05	09 31.77	+13 47.8	1.343	2.291	157.5	9.5	16.7
1991	03 15	09 25.68	+14 30.1					
1991	03 25	09 22.58	+14 56.7	1.524	2.338	135.1	17.5	17.3

1989 YT a,e,i = 2.57, 0.29, 4 Elements MPC 16435

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 18.95	+15 40.2	2.515	3.251	131.4	13.1	18.6
1991	01 14	10 14.63	+16 15.1					
1991	01 24	10 08.20	+16 58.4	2.353	3.269	154.4	7.5	18.3
1991	02 03	10 00.11	+17 46.0					
1991	02 13	09 51.00	+18 33.1	2.299	3.284	174.8	1.6	18.0
1991	02 23	09 41.72	+19 14.7					
1991	03 05	09 33.15	+19 47.0	2.368	3.296	155.4	7.2	18.3
1991	03 15	09 26.03	+20 08.1					
1991	03 25	09 20.87	+20 17.2	2.544	3.305	132.9	12.8	18.7

1988 QP a,e,i = 3.10, 0.09, 9 Elements MPC 13859

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 14.98	+06 11.4	2.099	2.823	129.0	15.7	17.1
1991	01 14	10 11.97	+05 48.2					
1991	01 24	10 06.67	+05 38.1	1.928	2.828	150.8	9.8	16.7
1991	02 03	09 59.52	+05 40.3					
1991	02 13	09 51.22	+05 52.8	1.853	2.834	171.8	2.9	16.4
1991	02 23	09 42.68	+06 12.5					
1991	03 05	09 34.89	+06 35.0	1.892	2.841	159.2	7.1	16.6
1991	03 15	09 28.65	+06 56.5					
1991	03 25	09 24.56	+07 13.6	2.034	2.849	137.4	13.7	17.0

(4268) 1972 TW3 a,e,i = 2.64, 0.26, 4 Elements MPC 15539

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 23.26	+14 14.4	2.080	2.815	130.0	15.5	18.4
1991	01 14	10 19.16	+14 39.3					
1991	01 24	10 12.61	+15 14.6	1.951	2.864	153.0	9.0	18.1
1991	02 03	10 04.15	+15 55.6					
1991	02 13	09 54.59	+16 37.3	1.925	2.910	175.9	1.4	17.7
1991	02 23	09 44.92	+17 14.1					
1991	03 05	09 36.19	+17 41.9	2.016	2.955	157.0	7.5	18.2
1991	03 15	09 29.17	+17 58.4					
1991	03 25	09 24.41	+18 03.1	2.213	2.997	134.5	13.7	18.6

1984 FM a,e,i = 2.35, 0.23, 24 Elements MPC 11623

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 38.63	+55 44.4	1.187	1.949	127.6	23.5	16.8
1991	01 14	10 39.36	+57 58.6					
1991	01 24	10 32.93	+59 53.6	1.096	1.910	133.3	22.0	16.5
1991	02 03	10 19.51	+61 08.3					
1991	02 13	10 01.28	+61 23.5	1.064	1.876	132.3	22.9	16.5
1991	02 23	09 42.45	+60 27.8					
1991	03 05	09 27.37	+58 24.1	1.089	1.848	125.2	26.0	16.6
1991	03 15	09 18.36	+55 26.0					
1991	03 25	09 15.73	+51 49.6	1.165	1.828	115.2	29.6	16.8

1981 ET31 a,e,i = 2.99, 0.24, 10 Elements MPC 16577

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04		10 16.48	+01 02.3	1.737	2.451	126.4	18.8	16.4
1991 01 14		10 15.01	+01 12.4					
1991 01 24		10 11.01	+01 45.0	1.601	2.490	147.7	12.2	16.0
1991 02 03		10 04.94	+02 38.8					
1991 02 13		09 57.58	+03 49.8	1.554	2.531	169.3	4.1	15.7
1991 02 23		09 49.94	+05 11.1					
1991 03 05		09 43.10	+06 34.4	1.615	2.573	161.3	7.1	16.0
1991 03 15		09 37.94	+07 52.2					
1991 03 25		09 35.02	+08 58.7	1.778	2.618	139.6	14.3	16.4

(4439) 1984 VA a,e,i = 3.07, 0.28, 2 Elements MPC 16218

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04		10 21.63	+13 43.6	1.784	2.533	130.2	17.2	17.2
1991 01 14		10 19.09	+14 09.2					
1991 01 24		10 13.90	+14 47.1	1.672	2.586	152.6	10.1	16.8
1991 02 03		10 06.62	+15 32.6					
1991 02 13		09 58.09	+16 19.5	1.654	2.639	175.4	1.7	16.5
1991 02 23		09 49.42	+17 01.5					
1991 03 05		09 41.69	+17 33.6	1.748	2.694	158.3	7.8	17.0
1991 03 15		09 35.77	+17 53.1					
1991 03 25		09 32.19	+17 58.9	1.943	2.750	136.2	14.5	17.5

1982 SC2 a,e,i = 2.22, 0.12, 5 Elements MPC 13157

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04		10 22.18	+12 53.6	1.546	2.303	129.8	19.1	16.6
1991 01 14		10 20.75	+13 32.7					
1991 01 24		10 16.14	+14 30.6	1.360	2.277	152.0	11.7	16.1
1991 02 03		10 08.65	+15 42.8					
1991 02 13		09 59.04	+17 01.6	1.265	2.250	174.8	2.3	15.5
1991 02 23		09 48.57	+18 17.0					
1991 03 05		09 38.80	+19 19.6	1.276	2.222	156.8	10.1	15.8
1991 03 15		09 31.08	+20 03.5					
1991 03 25		09 26.38	+20 26.3	1.381	2.194	134.0	19.1	16.3

(4379) 1988 PT1 a,e,i = 3.17, 0.12, 22 Elements MPC 15870

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04		10 17.82	-15 14.9	2.738	3.307	117.4	15.3	17.5
1991 01 14		10 15.25	-15 45.7					
1991 01 24		10 10.85	-15 56.4	2.553	3.327	135.4	12.0	17.3
1991 02 03		10 04.95	-15 44.7					
1991 02 13		09 58.08	-15 09.9	2.449	3.346	150.8	8.3	17.1
1991 02 23		09 50.91	-14 13.3					
1991 03 05		09 44.18	-12 58.9	2.449	3.364	153.1	7.7	17.1
1991 03 15		09 38.53	-11 32.6					
1991 03 25		09 34.47	-10 01.0	2.557	3.381	139.9	11.0	17.3

1984 SG1 a,e,i = 2.78, 0.08, 3 Elements MPC 15555

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04		10 22.43	+07 40.6	2.153	2.864	127.9	15.7	17.2
1991 01 14		10 19.50	+07 41.6					
1991 01 24		10 14.25	+07 56.3	1.983	2.879	150.2	9.8	16.8
1991 02 03		10 07.08	+08 22.7					
1991 02 13		09 58.68	+08 57.7	1.910	2.894	173.7	2.1	16.4
1991 02 23		09 49.91	+09 36.6					
1991 03 05		09 41.78	+10 14.6	1.953	2.907	160.7	6.5	16.7
1991 03 15		09 35.10	+10 47.4					
1991 03 25		09 30.47	+11 12.1	2.102	2.920	138.0	13.2	17.1

6766 P-L a,e,i = 3.15, 0.06, 14 Elements MPC 12700

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	10 19.77	+01 27.8	2.602	3.277	125.9	14.1	17.9
1991 01 14	10 17.63	+01 45.4					
1991 01 24	10 13.60	+02 19.2	2.395	3.269	147.5	9.3	17.5
1991 02 03	10 07.99	+03 08.4					
1991 02 13	10 01.29	+04 10.6	2.285	3.261	169.3	3.2	17.1
1991 02 23	09 54.17	+05 21.4					
1991 03 05	09 47.39	+06 35.4	2.293	3.252	162.3	5.3	17.2
1991 03 15	09 41.64	+07 47.3					
1991 03 25	09 37.47	+08 52.3	2.414	3.243	140.2	11.4	17.6

1981 EO19 a,e,i = 2.98, 0.07, 9 Elements MPC 10618

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	10 22.11	+02 02.7	2.169	2.856	125.6	16.3	18.7
1991 01 14	10 20.26	+02 10.7					
1991 01 24	10 16.21	+02 36.7	1.992	2.869	147.1	10.7	18.4
1991 02 03	10 10.30	+03 19.7					
1991 02 13	10 03.13	+04 16.9	1.907	2.882	169.2	3.7	18.0
1991 02 23	09 55.51	+05 23.4					
1991 03 05	09 48.35	+06 33.1	1.935	2.896	162.6	5.9	18.2
1991 03 15	09 42.46	+07 39.7					
1991 03 25	09 38.45	+08 38.4	2.071	2.911	140.5	12.6	18.6

(4267) 1971 QP a,e,i = 2.33, 0.20, 2 Elements MPC 15538

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	10 30.52	+06 12.9	2.086	2.775	125.5	16.8	18.6
1991 01 14	10 27.43	+06 19.4					
1991 01 24	10 21.81	+06 41.7	1.903	2.786	148.0	10.8	18.2
1991 02 03	10 14.03	+07 18.1					
1991 02 13	10 04.74	+08 05.2	1.813	2.794	172.0	2.8	17.8
1991 02 23	09 54.89	+08 57.9					
1991 03 05	09 45.55	+09 50.0	1.841	2.799	161.6	6.4	18.0
1991 03 15	09 37.67	+10 36.6					
1991 03 25	09 31.96	+11 13.7	1.977	2.801	138.3	13.7	18.4

1989 VT1 a,e,i = 2.92, 0.02, 3 Elements MPC 15721

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	10 26.35	+11 08.9	2.222	2.934	128.3	15.2	17.3
1991 01 14	10 24.23	+11 33.4					
1991 01 24	10 19.83	+12 10.9	2.041	2.938	150.5	9.5	16.9
1991 02 03	10 13.50	+12 58.2					
1991 02 13	10 05.81	+13 51.0	1.958	2.942	174.3	1.9	16.5
1991 02 23	09 57.60	+14 43.4					
1991 03 05	09 49.83	+15 30.2	1.991	2.946	160.9	6.3	16.8
1991 03 15	09 43.32	+16 07.1					
1991 03 25	09 38.71	+16 31.9	2.131	2.950	138.2	13.0	17.2

(4410) 1989 YA a,e,i = 3.06, 0.09, 11 Elements MPC 16017

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	10 32.48	+24 44.0	2.477	3.203	130.4	13.5	16.7
1991 01 14	10 29.66	+25 35.6					
1991 01 24	10 24.52	+26 31.8	2.322	3.217	150.8	8.6	16.4
1991 02 03	10 17.45	+27 26.8					
1991 02 13	10 09.05	+28 14.4	2.269	3.231	164.3	4.8	16.2
1991 02 23	10 00.17	+28 49.0					
1991 03 05	09 51.75	+29 06.9	2.332	3.244	152.5	8.1	16.4
1991 03 15	09 44.62	+29 07.2					
1991 03 25	09 39.39	+28 50.8	2.496	3.256	132.7	13.0	16.7

1988 RF5 a,e,i = 2.80, 0.18, 10 Elements MPC 15712

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 33.46	+17 57.1	1.625	2.368	128.7	18.9	15.1
1991	01 14	10 32.33	+17 52.5					
1991	01 24	10 28.02	+17 56.8	1.442	2.346	149.9	12.2	14.6
1991	02 03	10 20.82	+18 05.7					
1991	02 13	10 11.47	+18 13.7	1.346	2.328	171.7	3.5	14.1
1991	02 23	10 01.16	+18 14.7					
1991	03 05	09 51.37	+18 03.9	1.356	2.312	160.0	8.4	14.3
1991	03 15	09 43.39	+17 39.6					
1991	03 25	09 38.14	+17 01.7	1.462	2.301	137.9	16.9	14.7

(4351) 1989 UR1 a,e,i = 2.86, 0.07, 2 Elements MPC 15695

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 31.44	+08 11.3	2.172	2.863	126.0	16.1	17.4
1991	01 14	10 29.56	+08 26.3					
1991	01 24	10 25.35	+08 55.9	1.994	2.877	148.1	10.4	17.1
1991	02 03	10 19.12	+09 37.7					
1991	02 13	10 11.47	+10 28.1	1.910	2.891	172.1	2.7	16.7
1991	02 23	10 03.21	+11 21.6					
1991	03 05	09 55.31	+12 12.4	1.941	2.905	163.4	5.6	16.9
1991	03 15	09 48.61	+12 55.9					
1991	03 25	09 43.80	+13 28.6	2.080	2.918	140.4	12.6	17.3

1982 UH a,e,i = 2.38, 0.19, 2 Elements MPC 7470

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 36.82	+05 40.8	1.629	2.325	123.8	20.6	17.8
1991	01 14	10 34.85	+05 36.5					
1991	01 24	10 29.84	+05 51.4	1.489	2.369	145.8	13.5	17.4
1991	02 03	10 22.22	+06 23.9					
1991	02 13	10 12.78	+07 09.8	1.433	2.412	170.0	4.1	17.0
1991	02 23	10 02.70	+08 02.9					
1991	03 05	09 53.29	+08 55.8	1.486	2.454	163.7	6.5	17.2
1991	03 15	09 45.65	+09 42.3					
1991	03 25	09 40.54	+10 17.8	1.643	2.495	140.6	14.7	17.8

1984 QF a,e,i = 2.68, 0.19, 14 Elements MPC 13465

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 33.53	+11 30.5	2.454	3.143	126.8	14.5	17.7
1991	01 14	10 31.21	+12 22.7					
1991	01 24	10 26.72	+13 28.7	2.270	3.156	149.3	9.2	17.3
1991	02 03	10 20.35	+14 44.5					
1991	02 13	10 12.63	+16 04.8	2.186	3.167	172.3	2.4	16.9
1991	02 23	10 04.30	+17 23.2					
1991	03 05	09 56.23	+18 33.4	2.223	3.176	160.7	5.9	17.2
1991	03 15	09 49.22	+19 31.0					
1991	03 25	09 43.92	+20 13.5	2.373	3.183	137.8	12.1	17.5

1985 KC a,e,i = 2.20, 0.03, 6 Elements MPC 15412

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 39.46	+12 46.3	1.539	2.260	125.8	20.7	17.9
1991	01 14	10 38.08	+12 45.2					
1991	01 24	10 33.32	+12 58.9	1.363	2.256	147.6	13.5	17.4
1991	02 03	10 25.45	+13 24.1					
1991	02 13	10 15.21	+13 55.7	1.270	2.252	172.0	3.5	16.9
1991	02 23	10 03.85	+14 26.6					
1991	03 05	09 52.95	+14 49.8	1.283	2.247	161.9	7.9	17.1
1991	03 15	09 43.91	+15 00.9					
1991	03 25	09 37.76	+14 57.8	1.394	2.241	138.5	17.1	17.6

(4395) 1981 EH41 a,e,i = 3.00, 0.08, 10 Elements MPC 16011

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04		10 30.61	-00 11.3	2.566	3.206	122.7	15.0	17.6
1991 01 14		10 28.83	-00 10.0					
1991 01 24		10 25.06	+00 07.5	2.349	3.197	143.9	10.4	17.3
1991 02 03		10 19.54	+00 41.2					
1991 02 13		10 12.75	+01 29.5	2.223	3.188	165.6	4.4	16.9
1991 02 23		10 05.33	+02 29.1					
1991 03 05		09 58.06	+03 34.9	2.211	3.178	164.6	4.7	16.9
1991 03 15		09 51.70	+04 41.7					
1991 03 25		09 46.86	+05 44.2	2.313	3.167	143.1	10.9	17.2

(4322) 1981 EE37 a,e,i = 2.28, 0.18, 5 Elements MPC 15685

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04		10 42.52	+13 53.6	1.966	2.660	125.5	17.5	18.6
1991 01 14		10 39.98	+14 19.7					
1991 01 24		10 34.62	+14 59.1	1.787	2.672	147.8	11.3	18.2
1991 02 03		10 26.75	+15 47.6					
1991 02 13		10 16.99	+16 39.4	1.702	2.681	171.1	3.3	17.8
1991 02 23		10 06.38	+17 27.5					
1991 03 05		09 56.13	+18 05.6	1.731	2.688	160.9	6.9	18.0
1991 03 15		09 47.33	+18 29.9					
1991 03 25		09 40.82	+18 38.8	1.868	2.691	137.8	14.4	18.4

(4360) 1964 TG2 a,e,i = 2.60, 0.16, 3 Elements MPC 15863

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04		10 40.67	+09 05.3	1.854	2.541	124.3	18.7	17.1
1991 01 14		10 38.87	+09 08.7					
1991 01 24		10 34.29	+09 27.4	1.698	2.575	146.2	12.3	16.7
1991 02 03		10 27.29	+09 58.9					
1991 02 13		10 18.54	+10 39.0	1.630	2.609	170.6	3.6	16.3
1991 02 23		10 09.05	+11 21.9					
1991 03 05		09 59.97	+12 01.4	1.674	2.643	164.5	5.7	16.5
1991 03 15		09 52.32	+12 32.9					
1991 03 25		09 46.87	+12 53.2	1.824	2.676	141.3	13.5	17.0

1979 TY1 a,e,i = 2.29, 0.15, 9 Elements MPC 13056

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04		10 46.53	+21 42.1	1.391	2.130	126.7	21.7	17.8
1991 01 14		10 45.66	+22 28.4					
1991 01 24		10 40.99	+23 26.1	1.268	2.163	147.2	14.3	17.4
1991 02 03		10 32.89	+24 26.6					
1991 02 13		10 22.29	+25 19.2	1.228	2.197	165.1	6.6	17.1
1991 02 23		10 10.68	+25 53.6					
1991 03 05		09 59.80	+26 03.4	1.288	2.231	156.0	10.4	17.4
1991 03 15		09 51.09	+25 48.0					
1991 03 25		09 45.47	+25 10.2	1.441	2.265	135.8	17.9	17.9

(4288) 1989 TQ1 a,e,i = 2.63, 0.18, 14 Elements MPC 15545

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04		10 47.31	+27 59.6	2.150	2.858	127.7	15.8	16.3
1991 01 14		10 44.73	+29 07.3					
1991 01 24		10 39.29	+30 19.7	2.012	2.888	146.9	10.7	16.0
1991 02 03		10 31.34	+31 28.7					
1991 02 13		10 21.57	+32 26.0	1.970	2.915	159.3	6.9	15.8
1991 02 23		10 11.02	+33 04.2					
1991 03 05		10 00.90	+33 19.1	2.039	2.941	150.1	9.7	16.0
1991 03 15		09 52.26	+33 10.2					
1991 03 25		09 45.88	+32 40.1	2.207	2.964	131.6	14.6	16.4

1989 SA a,e,i = 2.59, 0.19, 14 Elements MPC 15420

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 44.57	+25 35.6	2.042	2.757	127.9	16.3	18.0
1991	01 14	10 42.61	+26 59.6					
1991	01 24	10 37.77	+28 30.9	1.910	2.792	147.6	10.9	17.7
1991	02 03	10 30.40	+30 01.1					
1991	02 13	10 21.17	+31 20.9	1.875	2.824	160.3	6.8	17.6
1991	02 23	10 11.13	+32 21.6					
1991	03 05	10 01.47	+32 58.0	1.950	2.855	150.4	9.9	17.8
1991	03 15	09 53.29	+33 09.1					
1991	03 25	09 47.36	+32 56.7	2.124	2.885	131.7	15.0	18.2

(4305) Clapton a,e,i = 2.91, 0.07, 2 Elements MPC 15679

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 36.58	+07 08.8	2.024	2.705	124.5	17.4	16.7
1991	01 14	10 35.79	+07 13.4					
1991	01 24	10 32.52	+07 33.7	1.832	2.704	145.9	11.8	16.3
1991	02 03	10 27.03	+08 08.3					
1991	02 13	10 19.84	+08 54.0	1.728	2.705	169.5	3.8	15.9
1991	02 23	10 11.77	+09 45.4					
1991	03 05	10 03.86	+10 36.5	1.734	2.707	165.9	5.1	15.9
1991	03 15	09 57.05	+11 21.6					
1991	03 25	09 52.12	+11 56.4	1.848	2.710	142.8	12.8	16.4

1981 ED27 a,e,i = 2.99, 0.06, 11 Elements MPC 15409

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 38.11	+01 11.8	2.340	2.976	121.6	16.3	17.5
1991	01 14	10 37.36	+01 20.2					
1991	01 24	10 34.44	+01 46.4	2.120	2.964	142.8	11.6	17.1
1991	02 03	10 29.56	+02 30.1					
1991	02 13	10 23.13	+03 29.3	1.986	2.953	165.6	4.8	16.7
1991	02 23	10 15.83	+04 40.0					
1991	03 05	10 08.51	+05 56.1	1.965	2.941	167.5	4.2	16.6
1991	03 15	10 01.99	+07 11.2					
1991	03 25	09 57.02	+08 19.4	2.057	2.930	145.0	11.3	17.0

1988 RR4 a,e,i = 2.67, 0.15, 4 Elements MPC 16430

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 38.67	+06 49.4	1.843	2.526	123.9	18.9	17.2
1991	01 14	10 38.92	+06 58.9					
1991	01 24	10 36.51	+07 26.9	1.624	2.495	145.0	13.1	16.7
1991	02 03	10 31.56	+08 12.6					
1991	02 13	10 24.51	+09 12.7	1.488	2.464	168.7	4.5	16.2
1991	02 23	10 16.19	+10 21.3					
1991	03 05	10 07.75	+11 30.2	1.459	2.434	166.5	5.4	16.1
1991	03 15	10 00.34	+12 32.0					
1991	03 25	09 54.96	+13 20.7	1.534	2.406	143.0	14.4	16.5

1984 OA a,e,i = 2.64, 0.22, 17 Elements MPC 14192

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 04	10 44.83	+12 05.1	2.514	3.175	124.4	14.8	18.7
1991	01 14	10 43.09	+13 04.4					
1991	01 24	10 39.15	+14 18.0	2.319	3.187	146.6	9.8	18.4
1991	02 03	10 33.23	+15 42.0					
1991	02 13	10 25.78	+17 10.7	2.222	3.197	169.0	3.4	18.0
1991	02 23	10 17.49	+18 37.4					
1991	03 05	10 09.21	+19 55.3	2.246	3.204	162.1	5.5	18.2
1991	03 15	10 01.76	+20 59.4					
1991	03 25	09 55.85	+21 46.9	2.384	3.208	139.5	11.6	18.5

1986 TC1 a,e,i = 2.25, 0.19, 4 Elements MPC 11625

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 04	10 47.54	+07 22.5	1.512	2.198	122.0	22.3	17.6
1991 01 14	10 47.15	+07 44.8					
1991 01 24	10 43.48	+08 28.9	1.370	2.241	143.8	15.0	17.2
1991 02 03	10 36.83	+09 31.9					
1991 02 13	10 27.90	+10 47.6	1.307	2.283	168.4	5.0	16.7
1991 02 23	10 17.84	+12 07.0					
1991 03 05	10 08.09	+13 20.3	1.350	2.325	165.8	6.0	16.9
1991 03 15	09 59.91	+14 19.9					
1991 03 25	09 54.25	+15 01.5	1.496	2.364	142.2	15.0	17.5

1989 XC1 a,e,i = 2.69, 0.12, 9 Elements MPC 16435

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 24	10 42.75	+17 07.3	2.002	2.874	146.3	11.0	16.8
1991 02 03	10 36.83	+18 19.4					
1991 02 13	10 29.15	+19 33.7	1.920	2.892	167.4	4.3	16.5
1991 02 23	10 20.51	+20 42.8					
1991 03 05	10 11.91	+21 39.9	1.953	2.909	161.1	6.3	16.6
1991 03 15	10 04.30	+22 20.6					
1991 03 25	09 58.46	+22 43.0	2.093	2.925	139.6	12.8	17.0
1991 04 04	09 54.88	+22 47.7					
1991 04 14	09 53.72	+22 36.6	2.314	2.939	119.4	17.3	17.4

1988 NN a,e,i = 2.55, 0.20, 15 Elements MPC 13471

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 24	10 42.35	-11 52.2	2.229	2.989	133.1	13.9	18.3
1991 02 03	10 36.85	-11 52.1					
1991 02 13	10 29.62	-11 28.8	2.059	2.968	152.1	8.9	18.0
1991 02 23	10 21.32	-10 42.1					
1991 03 05	10 12.78	-09 35.1	1.993	2.945	160.2	6.5	17.8
1991 03 15	10 04.92	-08 13.4					
1991 03 25	09 58.53	-06 44.3	2.038	2.920	146.3	10.9	18.0
1991 04 04	09 54.20	-05 15.7					
1991 04 14	09 52.21	-03 53.6	2.177	2.892	126.9	16.1	18.3

(4527) Schoenberg a,e,i = 2.24, 0.21, 4 Elements MPC 16565

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 24	10 46.20	+08 00.7	1.847	2.699	143.0	12.7	18.2
1991 02 03	10 39.84	+08 53.9					
1991 02 13	10 31.41	+09 59.3	1.717	2.689	167.4	4.6	17.8
1991 02 23	10 21.71	+11 10.9					
1991 03 05	10 11.82	+12 21.0	1.699	2.675	167.1	4.7	17.7
1991 03 15	10 02.86	+13 23.0					
1991 03 25	09 55.77	+14 11.6	1.794	2.658	142.9	13.1	18.2
1991 04 04	09 51.17	+14 44.3					
1991 04 14	09 49.30	+15 01.0	1.972	2.638	121.4	18.9	18.5

1989 XA a,e,i = 2.91, 0.03, 3 Elements MPC 15897

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 24	10 42.91	+12 34.2	2.024	2.887	145.2	11.2	16.8
1991 02 03	10 37.43	+13 14.0					
1991 02 13	10 30.18	+14 00.1	1.907	2.881	168.3	4.0	16.4
1991 02 23	10 21.90	+14 46.8					
1991 03 05	10 13.54	+15 28.3	1.903	2.874	165.8	4.9	16.5
1991 03 15	10 06.03	+16 00.1					
1991 03 25	10 00.18	+16 19.2	2.008	2.868	143.0	12.1	16.8
1991 04 04	09 56.51	+16 24.4					
1991 04 14	09 55.23	+16 16.2	2.197	2.862	122.3	17.2	17.2

7618 P-L a,e,i = 3.18, 0.10, 6 Elements MPC 12584

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 24	10 42.64	+09 56.2	2.156	3.012	144.5	10.9	17.2
1991	02 03	10 37.79	+10 46.8					
1991	02 13	10 31.38	+11 45.5	2.056	3.028	167.8	3.9	16.8
1991	02 23	10 24.07	+12 46.9					
1991	03 05	10 16.72	+13 45.0	2.070	3.045	167.4	4.1	16.8
1991	03 15	10 10.14	+14 34.7					
1991	03 25	10 05.03	+15 12.5	2.195	3.063	144.5	10.9	17.2
1991	04 04	10 01.86	+15 36.6					
1991	04 14	10 00.81	+15 46.8	2.409	3.081	123.7	15.7	17.6

1989 XM a,e,i = 2.93, 0.03, 3 Elements MPC 15898

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 24	10 45.02	+12 18.7	2.167	3.024	144.7	10.9	17.3
1991	02 03	10 39.57	+12 59.9					
1991	02 13	10 32.45	+13 47.1	2.053	3.025	167.8	4.0	16.9
1991	02 23	10 24.35	+14 35.1					
1991	03 05	10 16.16	+15 18.3	2.053	3.026	166.4	4.4	16.9
1991	03 15	10 08.73	+15 52.4					
1991	03 25	10 02.83	+16 14.4	2.165	3.026	143.6	11.3	17.3
1991	04 04	09 58.96	+16 23.1					
1991	04 14	09 57.33	+16 18.9	2.363	3.026	122.8	16.2	17.6

1986 JQ a,e,i = 1.93, 0.07, 20 Elements MPC 16579

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 24	10 47.48	-25 07.3	1.332	2.041	122.9	23.9	17.2
1991	02 03	10 42.78	-25 59.8					
1991	02 13	10 35.08	-26 07.9	1.185	2.029	138.1	19.0	16.8
1991	02 23	10 25.29	-25 23.4					
1991	03 05	10 14.92	-23 44.9	1.106	2.016	147.9	15.2	16.5
1991	03 15	10 05.61	-21 19.5					
1991	03 25	09 58.85	-18 22.5	1.112	2.001	143.2	17.4	16.5
1991	04 04	09 55.57	-15 13.7					
1991	04 14	09 56.04	-12 10.6	1.198	1.985	128.6	23.2	16.9

2064 P-L a,e,i = 3.18, 0.10, 4 Elements MPC 16033

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 24	10 45.86	+05 08.6	2.022	2.862	141.9	12.3	18.0
1991	02 03	10 40.91	+05 21.7					
1991	02 13	10 34.23	+05 46.4	1.902	2.867	164.9	5.2	17.6
1991	02 23	10 26.51	+06 19.1					
1991	03 05	10 18.66	+06 55.3	1.892	2.873	170.1	3.4	17.5
1991	03 15	10 11.55	+07 29.9					
1991	03 25	10 05.98	+07 58.7	1.992	2.881	147.2	10.8	17.9
1991	04 04	10 02.47	+08 18.7					
1991	04 14	10 01.22	+08 28.0	2.181	2.890	126.3	16.2	18.3

1989 QL a,e,i = 1.93, 0.07, 23 Elements MPC 16433

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 24	10 52.19	+34 45.3	1.097	1.975	143.3	17.3	15.5
1991	02 03	10 47.56	+38 32.3					
1991	02 13	10 38.83	+42 02.6	1.044	1.958	149.2	15.0	15.3
1991	02 23	10 27.19	+44 51.4					
1991	03 05	10 14.82	+46 42.4	1.081	1.940	138.8	19.7	15.5
1991	03 15	10 04.16	+47 31.9					
1991	03 25	09 57.17	+47 25.8	1.187	1.922	123.1	25.8	15.8
1991	04 04	09 54.78	+46 35.8					
1991	04 14	09 56.94	+45 12.7	1.331	1.904	108.5	30.0	16.2

1041 T-2 a,e,i = 2.95, 0.11, 2 Elements MPC 15424

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 24	10 47.55	+06 24.6	2.447	3.279	142.0	10.6	18.6
1991	02 03	10 42.38	+06 58.0					
1991	02 13	10 35.69	+07 41.0	2.316	3.281	165.5	4.3	18.2
1991	02 23	10 28.09	+08 29.9					
1991	03 05	10 20.32	+09 19.8	2.300	3.282	170.1	3.0	18.2
1991	03 15	10 13.13	+10 06.3					
1991	03 25	10 07.20	+10 45.4	2.401	3.281	146.7	9.6	18.5
1991	04 04	10 03.03	+11 14.6					
1991	04 14	10 00.85	+11 32.6	2.596	3.279	125.3	14.5	18.9

1981 EK41 a,e,i = 2.26, 0.03, 6 Elements MPC 15881

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 24	10 50.24	+00 24.9	1.499	2.331	138.7	16.2	17.9
1991	02 03	10 45.21	+00 56.1					
1991	02 13	10 37.74	+01 49.7	1.371	2.330	161.8	7.6	17.4
1991	02 23	10 28.70	+03 01.3					
1991	03 05	10 19.30	+04 22.9	1.344	2.327	170.0	4.2	17.2
1991	03 15	10 10.83	+05 45.4					
1991	03 25	10 04.41	+06 59.8	1.423	2.324	147.1	13.5	17.7
1991	04 04	10 00.73	+07 59.8					
1991	04 14	10 00.05	+08 42.4	1.584	2.320	126.0	20.5	18.1

1978 TO8 a,e,i = 3.07, 0.19, 1 Elements MPC 12949

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 24	10 49.09	+06 24.5	2.570	3.398	141.7	10.3	18.3
1991	02 03	10 43.77	+06 55.7					
1991	02 13	10 37.06	+07 35.5	2.462	3.426	165.2	4.2	18.0
1991	02 23	10 29.53	+08 20.4					
1991	03 05	10 21.91	+09 06.0	2.470	3.452	170.6	2.7	17.9
1991	03 15	10 14.88	+09 48.2					
1991	03 25	10 09.07	+10 23.4	2.597	3.477	147.3	8.9	18.3
1991	04 04	10 04.91	+10 49.5					
1991	04 14	10 02.62	+11 05.3	2.818	3.501	125.8	13.4	18.7

1978 PD3 a,e,i = 2.36, 0.12, 6 Elements MPC 15403

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 24	10 57.39	+06 18.5	1.714	2.546	139.8	14.5	17.9
1991	02 03	10 51.02	+06 31.6					
1991	02 13	10 42.38	+06 57.0	1.601	2.564	163.7	6.2	17.5
1991	02 23	10 32.32	+07 30.4					
1991	03 05	10 22.00	+08 05.9	1.596	2.580	170.8	3.5	17.4
1991	03 15	10 12.61	+08 38.1					
1991	03 25	10 05.14	+09 02.1	1.701	2.594	146.8	12.2	17.9
1991	04 04	10 00.22	+09 15.3					
1991	04 14	09 58.05	+09 16.6	1.894	2.606	125.4	18.3	18.3

1986 AE a,e,i = 2.73, 0.38, 29 Elements MPC 14948

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 24	11 00.87	-26 05.1	2.344	2.963	120.1	16.7	18.5
1991	02 03	10 53.22	-27 24.6					
1991	02 13	10 43.58	-28 16.5	2.249	3.032	135.4	13.2	18.3
1991	02 23	10 32.70	-28 37.2					
1991	03 05	10 21.61	-28 26.6	2.241	3.098	143.9	10.9	18.3
1991	03 15	10 11.32	-27 48.3					
1991	03 25	10 02.72	-26 48.8	2.333	3.161	139.8	11.7	18.5
1991	04 04	09 56.40	-25 36.5					
1991	04 14	09 52.59	-24 19.6	2.514	3.221	127.2	14.4	18.8