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EDITORIAL NOTICE.

The 224-page batch of MPCs dated 1990 Dec. 2 was substantially larger than any previous batch and close to the limit that can be conveniently stapled and mailed. Although not true of that particular batch, a feature that considerably augments most batches is the ephemerides. The ever-increasing number of multiple-opposition unnumbered minor planets seems to suggest that the number of pages devoted to ephemerides will continue inexorably to proliferate. The problem is not so much the ephemerides of comets and earth-approaching minor planets, but those of minor planets in the main belt and beyond.

Two years ago the number of entries in these "standard" ephemerides was reduced so that the number of ephemerides per page could be increased from three to five. Beginning with this current batch of MPCs there will be 15 of these ephemerides per page. This is basically being accomplished by restricting the ephemeris dates to the 10-day dates closest to (mean) new moon, and the first and last lines of each ephemeris give the usual information for such dates immediately preceding and following the object's opposition date. Since no additional headers are supplied, it should be stated here that the successive entries on these ephemeris lines are usually the date (0 hours ET), R.A. (1950.0) in hours and minutes of time, Decl. (1950.0) in degrees and minutes of arc, Delta (geocentric distance) in AU, r (heliocentric distance) in AU, elongation angle in degrees, phase angle in degrees and V magnitude. Occasionally the elongation and phase will be replaced by the positional variation (R.A. in timemin, Decl. in arcmin) corresponding to a change of +1 day in perihelion date; such cases can be distinguished by the appearance of signs before the numbers in these particular columns. The middle line of each ephemeris gives--near the center--the object's designation, and this is immediately followed by the number of the MPC containing the object's orbital elements. The four numbers to the left of the designation are the mean first difference and half the second difference of first the R.A. and then the Decl. (in timemin and arcmin, respectively, and corresponding to a time interval of 10 days) for the first ephemeris date. The four numbers to the right of the MPC reference give the corresponding quantities for the last ephemeris date. Addition of the two differences to the corresponding tabulated position therefore yields the ephemeris position for 10 days later; the ephemeris position for 10 days before the tabulated value is obtained in the same way, except that the sign of the mean first difference must be changed. The user can therefore easily extend the ephemerides to six (but occasionally only five) 10-day dates surrounding opposition and interpolate (and extrapolate) to other dates in the usual way. Alternatively, since observations are likely to be restricted to within ten days of the tabulated dates, predicted positions can simply be calculated by Newton-Stirling interpolation, where

the second difference is multiplied by the square of one-tenth of the time difference in days and within about three days can generally be ignored.

Many readers of the MPCs are nowadays completely capable of calculating their own detailed ephemerides from specified orbital elements, and for this reason we feel that our severe abbreviation of the published ephemerides is justified. The principal reason for publishing ephemerides at all is merely to draw attention to the observability of particular objects. Concentration of published ephemerides around the moonless dates when wide-field surveys would be attempted also improves the efficiency with which the user can identify known objects that are accidentally recorded. Further, by specifying the positions for dates near the new moons surrounding opposition and indicating the general linearity of the motion near these dates we also draw rather direct attention to the fact that these are the times to make observations. Ideally, observations should be made on two nights near each of the new moons. If this is done for an unnumbered minor planet at two out of a total of four oppositions, the positions measured will almost invariably be sufficient to allow the determination of an orbit accurate enough for the object to be given a permanent number.

On MPC 8025 (1983 July 24) it was noted that, although the J2000.0 equinox was to be introduced into the standard astronomical ephemerides at the beginning of 1984, Commission 20 could not recommend its use in connection with astrometric and orbital work on comets and minor planets until suitable J2000.0 star catalogues (and charts) became widely available. The announcement of the northern-hemisphere portion of the Astronomisches Rechen-Institut's PPM (Positions and Proper Motions) catalogue (as well as of the FK5 itself) around the time of the IAU General Assembly in 1988 was felt to be an important step in this direction, and Commission 20 then made tentative plans to introduce J2000.0 on 1992 Jan. 1. The appearance in 1989 of the STScI's GSC (Guide Star Catalogue) has in fact meant that some observers are now having to convert positions from J2000.0 to B1950.0 for publication in the MPCs! In May 1990 a preliminary extension of the PPM to the southern hemisphere was issued, and the final version should become available in a few months. Copies of the PPM on magnetic tape can be obtained (for the price of a blank tape) from W. H. Warren, NASA/GSFC, Code 633.8, Greenbelt, MD 20771, U.S.A.; or from Centre de Donnees Stellaires, 11 Rue de l'Universite, F-67000 Strasbourg, France. The GSC is available (for $52.00) on CD-ROMs from the Astronomical Society of the Pacific, HST Orders Dept., 390 Ashton Ave., San Francisco, CA 94112, U.S.A. Among star charts can be mentioned W. Tirion et al.'s "Uranometria 2000.0" (Willmann-Bell, 1988).

A committee charged with establishing procedures for the transition from B1950.0 to J2000.0 has now completed its task and indeed recommended the introduction of the FK5/J2000.0 system in the work of Commission 20 at the beginning of 1992. Copies of the committee's report, which mainly involves the actual conversion of positions or orbital elements from B1950.0 to J2000.0 (and vice versa), are available (for example from the Minor Planet Center). In this connection, we wish to draw attention here to the procedures that have been given on pages B42 and B43 of the "Astronomical Almanac" since 1987 for the conversion of positions. It is important to note that these procedures are designed for converting the positions of STARS, not solar-system objects. Stars have proper motions, and the change in the value of the constant of precession causes the proper motions also to change when the positions are converted. Application to a comet or minor planet therefore means that the converted position will be accompanied by a nonzero proper motion, a circumstance that cannot be allowed. On the other hand, it is not permitted to ignore this proper motion, for application from

B1950.0 to J2000.0 and then back from J2000.0 to B1950.0 will not then yield the original result. The correct adjustment, in the case of a solar-system object, is actually to APPLY to the final position (J2000.0 or B1950.0) the effect of this proper motion (which is in units of arcsec per century) from the final epoch (2000.0 or 1950.0) to the epoch of observation. The proper motions can be ignored after that has been done, and the transformations from B1950.0 to J2000.0 and from J2000.0 to B1950.0 will be appropriately reciprocal.

It is not possible (in part because of ambivalence in the past with regard to the e-terms of aberration) to convert orbital elements between the systems in an entirely rigorous manner, and when results of extremely high precision are needed it will therefore be necessary to redetermine the orbits anew from observations that are already in the J2000.0 system. For most work, however, the recommendation is simply to convert the orbital elements (or P and Q vectors or heliocentric position and velocity vectors) using the 3 x 3 matrix X(0) of Murray (1989, A.Ap. 218, 325), in which case only the argument of perihelion, longitude of the ascending node and inclination will be affected. When accurate orbit computations are made directly in the J2000.0 system, it is important to use the IAU 1976 system of astronomical constants, specifically with regard to the masses of the perturbing planets. For the positions of the perturbing planets it is therefore appropriate to use the planetary ephemeris DE200, magnetic-tape copies of which can be obtained from E. M. Standish, Jet Propulsion Laboratory, JPL 301-150, Pasadena, CA 91109, U.S.A. It will generally be sufficient, however, to use some representation of the positions of the perturbing planets that is reasonably consistent with DE200. Some flexibility is necessary on this point because some orbit computers have expressed an interest in routinely including the perturbations by Ceres (and perhaps other minor planets) and/or excluding those by Pluto. Although the perturbations by some minor planets were considered in the preparation of DE200, the JPL version does not provide positions for them, whereas a set of starting position and velocity vectors contained in the "Japanese Ephemeris" includes data for the first four minor planets.

Particular attention should be paid, however, to the position of the earth, which is required more critically for geometrical than for dynamical purposes. While the 1950.0 equinox has been standard, most orbit computers have been using, either the straight Newcomb (1895, APAE 6) theory of the sun, or the Herget (1953, APAE 14) solar-coordinates tabulation with an additional secular term in the mean anomaly that yields differences of up to about 8 x 10 AU. Fewer use the JPL DE118 values, available since 1981, but these differ from Newcomb and Herget by as much as 40 x 10 AU. Since DE200, the new standard, was derived from DE118 essentially by application of the X(0) rotation, it can not be satisfactory to use in J2000.0 computations, particularly for earth-approaching objects, the Newcomb or Herget values modified only by this rotation. There is considerable merit to generating the solar coordinates from a theory, rather than from a numerical integration, and while the complete Bretagnon VSOP82 theory may be too cumbersome for many users and the simplified Bretagnon-Simon version (Willmann-Bell, 1986) is not sufficiently accurate, a treatment by Soma et al. (1988, Celes. Mech. 41, 389) gives J2000.0 ecliptic rectangular coordinates directly to within 8 x 10 AU, and comparable accuracy can be achieved for the Newcomb theory with the help of Stumpff's (1981, A.Ap. 101, 52) adjustments to DE102.

The timetable is that EMP 1992, currently being prepared, will contain orbital elements (for epoch 1992 June 27.0) that have been converted from B1950.0 to J2000.0. New orbital elements in preparation for EMP 1993 are

already being computed at ITA in the J2000.0 system, and the first batch of these (still for epoch 1991 Dec. 10.0) is expected to be published in the MPCs for 1991 May 28. We therefore propose that ALL new sets of orbital elements for ALREADY-NUMBERED minor planets (i.e., the ones published 12 to a page in 4-line format) to appear in the MPCs from that date onward should be in the J2000.0 system. The 1991 May 28 MPCs will also contain a set of B1950.0 orbital elements for comets predicted to return to perihelion in 1994, and the opportunity will be taken of giving the corresponding J2000.0 angles for predictions, already published in the MPCs, of comets returning during 1992-1994. Orbits for OTHER comets and other minor planets (newly-numbered, multiple-opposition and single-opposition) and OBSERVATIONS and EPHEMERIDES of both comets and minor planets will first be published (and uniformly so) in the J2000.0 system in the MPCs for 1992 Jan. 19; at that same time the epoch 1992 June 27.0 will be introduced for the orbits of all numbered and multiple-opposition unnumbered minor planets. Since no MPCs will be issued on 1991 Dec. 21, observers can consider using the J2000.0 system in data they submit to the Minor Planet Center after early November. For a limited time the Minor Planet Center will be prepared to make the necessary conversions. It will issue a new J2000.0 version of the complete magnetic tape of observations, as well as J2000.0 versions of the orbit catalogues (for comets and unnumbered minor planets and in printed and diskette form) around the end of the year. All the orbits and the ephemeris-computing program in the MPC/CBAT Computer Service will also be converted from B1950.0 to J2000.0 at that time.

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ERRATA.

MPC	Line	
17130	11	For Polaskis read Polakis
17405	-15	The orbit of 1990 VW1 is to be deleted.
17449	10	Add Id. G. V. Williams (MPC 17216), H. Kaneda
17456	10	For 2448180. read 2448180.5

* * * * *

CORRECTED OBSERVATIONS.

The following observations correct those previously published.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Mag.	N Obs.
1977 QF1	1990 10	27.41579	22 59 55.34	-02 38 02.6	MPC17320		1 413
1977 QF1	1990 10	27.47829	22 59 54.76	-02 37 43.9	MPC17320	16 V	1 413
1986 TF12*	1986 10	04.05028	02 31 13.68	+16 14 03.1	MPC14696	16.5V	095
1990 SQ	1990 10	15.75557	21 22 40.01	-03 58 46.4	MPC17331		589
1990 SQ	1990 10	15.76251	21 22 39.66	-03 58 26.2	MPC17331		589
1990 SQ	1990 10	15.76946	21 22 39.34	-03 58 05.0	MPC17331		589
1990 SQ	1990 10	15.79757	21 22 37.75	-03 56 37.2	MPC17331		589
1990 SQ	1990 10	15.80451	21 22 37.38	-03 56 16.3	MPC17331		589
1990 SQ	1990 10	15.81146	21 22 37.00	-03 55 55.4	MPC17331		589
1	1943 11	18.92257	06 34 47.07	+23 56 40.1	RI 2545		028
1	1945 05	10.04080	13 59 27.87	+00 24 25.5	MPC 411		804
1	1949 03	08.14340	09 18 53.12	+31 00 36.4	MPC 566		786
1	1955 07	27.90208	19 07 50.61	-30 48 00.9	MPC 1344		034
1	1956 09	18.03490	01 28 21.50	-06 38 33.2	MPC 1536		035
1	1956 11	02.87292	00 52 23.45	-08 58 57.0	MPC 1564	2	990
1	1961 11	19.99644	03 10 48.04	+09 25 32.6	MPC 2359	3	013
1	1961 11	19.99920	03 10 47.89	+09 25 32.8	MPC 2359	3	013

1		1963	03	13.84153	11	07	34.00	+24	01	45.3	MPC 2415	006
1		1964	07	01.93750	17	49	02.47	-26	41	27.8	MPC 2472	4 006
1		1965	06	30.45833	00	20	13.6	-10	33	06	MPC 2534	669
1		1965	07	08.46875	00	24	52.5	-10	37	52	MPC 2534	5 669
1		1968	01	06.16917	13	51	52.76	-00	29	31.5	MPC 3407	020
1		1968	01	06.17124	13	51	52.94	-00	29	32.4	MPC 3407	020
1		1968	01	06.17332	13	51	53.01	-00	29	32.2	MPC 3407	020
1		1968	03	21.01998	14	28	07.07	-00	17	57.4	MPC 3310	089
1		1973	07	03.97034	16	11	09.29	-20	11	15.7	MPC 4718	3 999
1		1973	07	03.97588	16	11	09.17	-20	11	16.7	MPC 4718	3 999
1		1973	07	03.98143	16	11	08.99	-20	11	16.9	MPC 4718	3 999
1		1974	06	26.79021	23	21	15.08	-16	47	14.2	MPC 3917	420
1		1974	10	28.91975	22	31	59.40	-23	21	11.2	MPC 4047	022
2		1941	09	20.81812	16	37	19.24	+11	04	41.4	RI 2288	012
2		1950	05	12.86897	15	16	53.82	+25	32	47.6	MPC 487	7 022
2		1950	05	15.92269	15	14	23.65	+25	49	20.6	MPC 487	7 022
2		1950	05	29.05203	15	04	21.55	+26	21	41.3	MPC 487	7 022
2		1950	05	29.05897	15	04	21.37	+26	21	39.3	MPC 487	7 022
2		1951	08	02.57222	19	45	49.11	+17	20	20.7	MPC 2336	330
2		1960	08	25.53419	18	34	31.40	+14	37	48.7	MPC 2222	8 334
2		1961	08	08.98769	23	21	23.68	+06	24	29.6	MPC 2367	4 089
2		1964	06	10.03125	16	04	49.02	+26	33	33.5	MPC 2408	4 990
2		1964	06	11.04167	16	04	04.11	+26	31	32.8	MPC 2408	4 990
2		1965	07	21.82345	20	40	06.58	+16	42	20.3	MPC 2957	5 073
2		1965	07	21.83154	20	40	06.23	+16	42	18.2	MPC 2957	5 073
2		1965	10	05.92638	20	06	52.09	+03	35	31.8	MPC 2950	013
2		1970	09	25.77540	21	44	39.28	+00	35	43.0	MPC 4239	057
3		1951	06	03.60977	16	04	05	-02	49	.7	MPC 714	377
3		1956	06	02.33701	19	21	44.42	-04	58	49.1	MPC 1541	804
3		1956	06	02.34463	19	21	44.19	-04	58	48.0	MPC 1541	804
3		1956	06	02.35259	19	21	43.99	-04	58	47.0	MPC 1541	804
3		1956	08	06.81242	18	32	50.42	-07	07	08.2	MPC 1796	073
3		1959	03	08.97937	13	38	15.17	-02	47	07.2	MPC 2708	084
3		1964	06	10.93194	15	36	24.51	-01	57	11.5	MPC 2408	990
3		1965	07	08.25804	20	49	49.33	-03	01	29.2	MPC 2857	822
3		1965	07	20.23101	20	41	26.22	-03	40	34.7	MPC 2857	822
3		1965	07	20.23518	20	41	26.04	-03	40	35.7	MPC 2857	822
3		1965	08	04.83004	20	28	14.92	-05	09	20.7	MPC 2959	073
3		1967	02	16.86292	08	03	50.51	+06	48	11.7	MPC 3177	9 089
3		1972	03	16.92277	13	04	28.54	-00	07	43.1	MPC 5141	073
3		1976	01	22.96735	11	08	12.99	-00	46	59.3	MPC 4551	022
3		1976	01	22.96944	11	08	12.96	-00	46	58.9	MPC 4551	022
3		1976	01	22.97153	11	08	12.91	-00	46	58.2	MPC 4551	022
3		1976	01	28.92918	11	06	13.01	-00	16	12.9	MPC 4551	022
3		1976	01	28.93124	11	06	12.96	-00	16	12.1	MPC 4551	022
3		1976	01	28.93344	11	06	12.90	-00	16	11.3	MPC 4551	022
3		1982	07	09.87429	17	53	58.64	-05	13	35.4	MPC 7173	046
4		1953	08	03.96007	22	03	48.99	-19	50	29.7	MPC 973	6.0 078
4		1960	08	11.69292	18	18	36.07	-25	17	29.2	MPC 2691	192
4		1966	03	17.77898	06	06	32.94	+25	00	11.8	MPC 3394	6 073
4		1966	03	17.78590	06	06	33.29	+25	00	12.1	MPC 3394	5 073
4		1966	03	17.79283	06	06	33.66	+25	00	12.8	MPC 3394	6 073
4		1969	02	05.81426	02	02	21.05	+06	43	32.6	MPC 3588	2 999
4		1971	08	04.84455	19	56	16.47	-25	11	30.1	MPC 5098	073
5		1940	11	22.93898	03	22	45.64	+09	21	51.7	RI 2214	999
5		1940	11	25.91726	03	19	56.74	+09	13	28.4	RI 2214	999
5		1959	07	08.87115	17	38	05.04	-17	12	38.4	MPC 2536	073
5		1959	07	13.83741	17	34	23.11	-17	21	11.5	MPC 2536	4 073
6		1951	01	07.67693	06	04	16	+06	27	.1	MPC 712	377

6		1957	09	01.11508	22	16	02.78	-18	57	50.0	MPC 1838	1 804
6		1957	09	01.12339	22	16	02.28	-18	57	57.0	MPC 1838	1 804
6		1960	08	11.79736	15	12	48.64	-02	37	24.8	MPC 5018	2 083
6		1961	09	01.04608	02	13	41.61	-05	54	31.3	MPC 2381	073
6		1961	09	07.99671	02	17	14.68	-07	20	19.6	MPC 2381	2 073
6		1961	11	24.74167	01	45	26.88	-15	59	49.3	MPC 2382	2 073
6		1961	12	05.77127	01	45	32.52	-14	16	43.3	MPC 2382	073
6		1962	01	10.71348	02	09	12.84	-06	13	32.3	MPC 2473	089
6		1965	10	20.93990	05	31	31.55	+00	19	17.6	MPC 2924	999
6		1965	10	25.21099	05	32	05.47	-00	09	38.9	MPC 2851	020
6		1965	10	25.21653	05	32	05.46	-00	09	40.5	MPC 2851	020
6		1965	10	25.21930	05	32	05.42	-00	09	40.9	MPC 2851	020
6		1965	11	28.91679	05	13	44.68	-02	12	44.8	MPC 2529	8.7 021
6		1966	02	12.05193	04	46	35.29	+09	10	37.6	MPC 2859	822
6		1966	02	12.05955	04	46	35.59	+09	10	42.5	MPC 2859	822
6		1966	02	24.02538	04	56	29.38	+11	18	57.5	MPC 2859	822
6		1967	05	05.81064	12	12	53.83	+16	11	51.7	MPC 3395	5 073
6		1967	05	05.82333	12	12	53.52	+16	11	51.3	MPC 3395	5 073
6		1967	05	13.10211	12	10	46.25	+16	05	41.1	MPC 3318	804
6		1968	09	10.79244	18	07	54.63	-16	39	23.7	MPC 3396	073
6		1971	01	29.10204	14	05	21.76	+01	02	32.5	MPC 5099	5 073
6		1971	01	29.11441	14	05	22.19	+01	02	35.0	MPC 5099	5 073
6		1976	07	19.76125	00	08	45.33	-05	18	13.1	MPC 4240	420
7		1946	06	02.00713	16	34	48.52	-23	22	59.5	MPC 116	804
7		1946	06	04.03893	16	32	40.18	-23	15	22.9	MPC 117	804
7		1946	06	05.02176	16	31	38.49	-23	11	37.9	MPC 117	804
7		1953	05	08.94931	14	24	37.96	-19	39	41.0	MPC 947	990
7		1957	06	27.08853	15	48	05.12	-21	09	36.0	MPC 1748	804
7		1958	08	17.01346	01	42	30.78	+19	13	22.9	MPC 2709	5 084
7		1958	09	11.04650	01	57	57.86	+21	46	45.8	MPC 2709	2 084
7		1958	09	14.05677	01	58	31.49	+21	56	39.2	MPC 2374	A 035
7		1958	10	03.92608	01	54	30.04	+22	00	51.5	MPC 2709	5 084
7		1958	10	10.93884	01	50	14.44	+21	34	19.2	MPC 2709	5 084
7		1958	10	13.90417	01	48	07.80	+21	18	42.4	MPC 2709	5 084
7		1958	11	06.80034	01	30	33.81	+18	07	33.5	MPC 2709	5 084
7		1958	11	12.80525	01	27	37.45	+17	13	52.2	MPC 2709	5 084
7		1958	11	18.82090	01	25	50.75	+16	23	51.3	MPC 2709	5 084
7		1958	12	02.73908	01	26	46.76	+14	54	16.4	MPC 2342	047
7		1958	12	12.74418	01	31	45.80	+14	17	44.8	MPC 2709	5 084
7		1958	12	13.73148	01	32	26.83	+14	15	27.8	MPC 2709	5 084
7		1964	06	26.84193	13	43	30.13	-14	35	11.6	MPC 2961	B 073
7		1965	07	25.89880	20	53	43.62	-09	50	53.5	MPC 2529	9.2 021
7		1969	10	11.80717	00	34	51.96	+15	09	06.6	MPC 3397	073
7		1975	06	11.07153	13	24	35.87	-13	45	17.7	MPC 4295	5 839
7		1975	06	11.07778	13	24	35.85	-13	45	16.3	MPC 4295	5 839
7		1975	06	11.08194	13	24	35.83	-13	45	15.5	MPC 4295	5 839
7		1975	06	11.08611	13	24	35.81	-13	45	14.7	MPC 4295	5 839
8		1960	04	28.91736	13	48.1		-01	00		MPC 2075	990
8		1960	04	29.66919	13	47	28.98	-00	57	56.4	MPC 2210	330
9		1966	07	07.20833	14	29	30.51	-13	32	41.1	MPC 2737	C 669
9		1966	07	12.20555	14	30	47.04	-13	48	58.1	MPC 2737	C 669
9		1966	07	17.23958	14	32	38.75	-14	07	35.6	MPC 2737	C 669
9		1969	02	18.11479	09	46	09.84	+23	34	35.8	MPC 3413	5 020
9		1969	02	18.11687	09	46	09.69	+23	34	36.2	MPC 3413	5 020
9		1969	03	20.86787	09	24	20.11	+24	20	02.8	MPC 5019	5 128
10		1949	03	01.06818	10	39	43.42	+03	28	58.8	MPC 251	804
10		1962	09	06.78849	21	53	24.78	-08	21	12.0	MPC 2865	073
10		1963	11	22.82160	02	10	15.06	+17	58	38.0	MPC 2415	006
11		1946	05	11.00860	15	11	11.93	-09	47	56.1	MPC 116	D 804

11		1946	05	31.99684	14	52	57.28	-08	58	46.4	MPC 116		D 804
11		1946	06	01.98795	14	52	14.59	-08	57	40.5	MPC 116		D 804
11		1946	06	04.01192	14	50	50.85	-08	56	24.2	MPC 116		D 804
11		1961	02	23.04440	12	55	30.11	+00	02	32.4	MPC 2363		084
11		1961	04	22.68093	12	12	41.53	+05	48	20.6	MPC 2692		4 192
11		1966	07	15.43014	00	09	04.18	-02	29	48.9	MPC 2737		C 669
11		1966	07	20.47874	00	12	10.93	-02	26	28.0	MPC 2737		C 669
11		1966	07	25.42666	00	14	37.28	-02	27	47.7	MPC 2737		C 669
11		1969	05	23.90639	14	38	02.41	-07	35	44.3	MPC 3300		057
11		1973	06	18.94828	15	58	25.71	-14	06	47.2	MPC 4720		999
12		1938	03	02.05058	09	42	25.68	+00	10	55.6	MPC 577		804
12		1971	06	15.90004	19	19	58.05	-10	43	07.3	MPC 3487		006
14		1965	10	26.07	02	10.5		+01	05		MPC 2654		760
14		1974	12	11.95486	06	36	22.75	+24	21	14.0	MPC 4046		2 990
14		1976	06	17.93468	16	46	59.06	-20	13	51.3	MPC 6935		999
14		1976	06	17.94566	16	46	58.45	-20	13	53.3	MPC 6935		999
14		1976	06	17.95684	16	46	57.78	-20	13	55.3	MPC 6935		999
14		1976	06	24.92803	16	40	54.44	-20	34	31.6	MPC 6935		999
14		1976	06	24.93911	16	40	53.88	-20	34	34.2	MPC 6935		999
14		1976	06	24.95019	16	40	53.33	-20	34	35.2	MPC 6935		999
14		1976	06	28.93304	16	37	53.62	-20	46	31.1	MPC 6935		999
14		1976	06	28.94412	16	37	53.12	-20	46	33.0	MPC 6935		999
14		1976	06	28.95520	16	37	52.65	-20	46	35.1	MPC 6935		999
14		1976	06	29.89360	16	37	13.81	-20	49	25.2	MPC 6935		999
14		1976	06	29.90468	16	37	13.35	-20	49	27.1	MPC 6935		999
14		1976	06	29.91577	16	37	12.86	-20	49	28.3	MPC 6935		999
14		1976	06	30.83542	16	36	36.10	-20	52	10.3	MPC 4137	10.0	076
16		1964	09	09.52110	20	16	25.22	-18	44	08.2	MPC 2595		334
16		1965	10	07.06497	05	04	48.00	+18	48	15.6	MPC 2852		020
16		1965	10	07.07069	05	04	48.09	+18	48	13.8	MPC 2852		020
16		1965	10	07.07363	05	04	48.20	+18	48	13.7	MPC 2852		020
17		1950	08	10.63214	22	07	38.14	-14	55	44.9	MPC 2334		330
17		1953	03	13.8757	11	59	30.36	+08	00	25.5	MPC 918		990
18		1939	07	19.97810	18	21	33.72	-10	21	46.8	MPC 605		804
18		1946	06	30.00047	19	13	56.64	-08	46	12.4	MPC 3202		8 020
18		1955	03	14.83812	09	15	09.78	+15	48	06.1	MPC 1499		084
18		1956	05	09.97500	15	42.5		-03	14		MPC 1461		990
18		1966	07	02.01307	12	49	12.69	+05	04	57.5	MPC 3190		804
18		1967	07	07.41458	21	01	42.26	-07	27	33.2	MPC 2824		669
18		1969	02	12.90972	10	24	58.96	+09	55	50.0	MPC 3186		990
18		1969	05	05.79640	09	56	29.95	+16	14	50.9	MPC 3401		073
18		1973	01	09.21141	13	30	55.69	-03	33	26.8	MPC 4855		020
19		1963	10	22.92744	02	25	19.49	+14	16	30.9	MPC 2543		073
20		1942	11	13.04940	02	37	46.86	+14	58	01.9	MPC 398		804
20		1946	12	20.96513	06	11	39.28	+22	13	22.9	MPC 20		047
20		1948	06	05.005	15	44.7		-19	07		MPC 174		022
20		1966	04	22.85300	09	51	44.86	+12	21	48.0	MPC 2734		040
20		1968	11	12.78807	00	37	12.27	+04	00	24.0	MPC 3417		020
21		1947	11	10.79885	02	41	30.52	+12	17	40.2	MPC 92		066
21		1951	12	26.64583	04	13	31.35	+20	47	40.9	MPC 2336		3 330
21		1956	01	09.1875	05	57.6		+24	42		MPC 1388	12.5	711
21		1970	11	19.84786	04	46	47.71	+21	07	05.1	MPC 3798		006
22		1940	08	07.98829	19	41	45.97	-37	28	45.5	MPC 615		804
23		1961	06	13.96528	18	23	27.91	-29	20	18.5	MPC 2159	12.0	E 076
27		1968	10	02.03053	02	42	00.83	+13	02	19.9	MPC 3418		020
27		1968	11	22.91597	01	59	42.30	+09	51	49.2	MPC 2932		4 990
27		1968	11	22.93680	01	59	41.33	+09	51	48.5	MPC 2932		4 990
27		1971	08	04.88610	21	07	11.98	-18	13	38.9	MPC 5103		073
28		1953	09	11.9185	21	43	02.80	-15	19	33.9	MPC 3044		5 022

28	1966	07	08.23052	17	20	10.67	-11	50	07.1	MPC	2737		C 669
28	1966	07	14.19604	17	16	27.31	-12	06	52.5	MPC	2737		C 669
28	1966	07	21.25278	17	12	56.06	-12	29	27.5	MPC	2737		C 669
29	1972	03	16.78681	10	05	02.97	+14	50	59.8	MPC	3961		075
29	1974	10	14.99167	00	13	28.25	+04	25	08.4	MPC	4043		990
29	1974	10	15.00000	00	13	27.81	+04	25	08.8	MPC	4043		990
29	1974	11	05.94931	00	00	08.54	+03	43	16.2	MPC	4044		990
29	1974	11	05.95764	00	00	08.30	+03	43	14.6	MPC	4044		990
30	1952	06	21.87847	18	49	20.78	-24	48	23.4	MPC	864	10.0	2 078
30	1966	04	26.98425	14	26	27.53	-18	03	35.2	MPC	3327		4 020
30	1966	04	27.02990	14	26	24.70	-18	03	20.8	MPC	3327		4 020
30	1974	07	18.03697	20	19	48.11	-20	07	20.4	MPC	4858		020
30	1974	07	18.03905	20	19	47.94	-20	07	20.2	MPC	4858		020
31	1957	02	23.90556	11	50	32.29	+36	53	11.1	MPC	1621		5 990
34	1971	09	11.85381	23	02	15.16	-03	22	25.4	MPC	5104		073
34	1971	09	11.86050	23	02	14.64	-03	22	29.4	MPC	5104		073
35	1969	02	18.06701	11	20	38.46	+07	43	28.4	MPC	3419		020
35	1969	02	18.09782	11	20	37.05	+07	43	31.2	MPC	3419		020
36	1951	12	26.62569	03	54	40.38	+54	14	40.0	MPC	2336		3 330
39	1952	01	18.56809	06	33	22.66	+10	45	30.1	MPC	2336		330
39	1958	03	29.03495	14	40	30.42	-03	27	32.9	MPC	2366		2 051
39	1959	08	03.92639	20	46	12.54	-10	05	45.0	MPC	2366		4 051
39	1960	11	18.72852	05	33	54.51	+07	31	18.3	MPC	2222		334
39	1966	03	17.80183	07	28	00.96	+15	50	00.7	MPC	3401		6 073
39	1966	03	17.80945	07	28	01.06	+15	50	02.4	MPC	3401		5 073
39	1966	03	17.82192	07	28	01.22	+15	50	05.4	MPC	3401		6 073
39	1967	05	05.86316	12	56	55.33	+05	06	03.1	MPC	3401		5 073
39	1967	05	05.87354	12	56	55.21	+05	06	05.0	MPC	3401		5 073
40	1946	09	27.83593	02	10	57.52	+05	32	49.2	MPC	92		066
40	1955	04	21.87692	12	52	50.49	+01	52	34.7	MPC	5019		5 083
40	1959	06	29.96875	18	33	56.06	-23	42	06.7	MPC	2366		F 051
40	1966	08	26.09339	20	08	16.25	-24	57	02.4	MPC	3190		G 804
40	1966	08	26.10585	20	08	15.85	-24	57	03.7	MPC	3190		G 804
40	1967	12	02.07539	07	46	19.69	+21	29	56.3	MPC	3301		5 057
42	1966	04	21.77293	11	27	13.06	+16	28	12.3	MPC	2659		H 095
42	1969	02	24.88860	07	05	40.67	+29	11	33.9	MPC	3420		020
42	1969	02	24.89206	07	05	40.46	+29	11	32.2	MPC	3420		020
42	1970	04	01.97236	12	58	09.43	+07	49	48.6	MPC	5104		4 073
42	1970	04	01.98552	12	58	08.88	+07	49	52.1	MPC	5104		4 073
43	1962	06	27.68877	19	48	33.09	-18	30	47.9	MPC	2316		I 334
44	1975	10	02.84444	22	18	59.13	-13	47	53.0	MPC	4034	11.3	J 076
45	1951	05	10.62862	14	27	04.81	-03	31	53.2	MPC	2335		2 330
46	1962	12	23.57986	03	55	03.53	+16	43	19.1	MPC	2317		5 334
46	1962	12	24.57161	03	54	30.36	+16	42	20.9	MPC	2317		5 334
47	1955	09	21.71875	01	56	51.33	+14	12	00.7	MPC	2609		388
47	1973	05	03.12083	13	13	25.92	-11	10	35.8	MPC	3803		3 839
48	1939	08	14.84560	20	45	12.23	-10	28	11.7	RI	2018		028
48	1966	07	10.23125	18	32	38.37	-13	52	21.3	MPC	2737		C 669
48	1966	07	15.22917	18	28	53.05	-13	59	51.1	MPC	2737		C 669
48	1966	07	23.27500	18	23	22.36	-14	14	16.3	MPC	2737		C 669
49	1938	06	24.02026	20	24	20.67	-18	54	19.7	MPC	3203		5 020
49	1938	06	24.05870	20	24	19.65	-18	54	19.8	MPC	3203		5 020
49	1966	12	05.85417	01	33	07.27	+14	14	37.9	MPC	2733		990
50	1943	08	05.93	20	16.7		-16	07		RI	2516		073
62	1952	05	16.91	14	51.1		-13	19		MPC	796	13.2	020
64	1951	10	26.8778	00	45	21.74	+06	55	44.0	MPC	763		5 990
76	1956	10	05.88194	00	33	43.98	+04	45	39.5	MPC	1564		K 990
80	1968	04	16.18553	13	14	50.48	-11	50	40.3	MPC	3593		L 804
119	1942	03	12.85139	09	59	57.48	+05	27	30.3	RI	2398		M 028

135	1954 05	05.94163	14 02 54.40	-15 53 35.4	MPC 1139				983
148	1944 08	14.90868	20 35 26.82	-09 43 09.6	RI 2560				028
149	1971 09	12.76949	20 35 27.34	-18 16 05.7	MPC 3509				095
193	1942 03	16.922	11 42.0	+00 05	RI 2469	12.0			078
828	1963 12	15.32153	07 31 20.23	+23 21 23.1	MPC12775				760
1725	1965 10	25.31018	03 00 04.66	+12 02 13.8	MPC 2867				760
1725	1965 10	25.35532	03 00 02.38	+12 02 05.3	MPC 2867				760

Note 1: observations interchanged. 2: date originally in error. 3: date changed by +1 month. 4: date changed by -1 day. 5: date changed by +1 day. 6 = 5 + 1. 7: date changed by +2 months. 8: date changed by +2 days. 9: originally given as (6). A: year originally given as 1959. B: time changed by +12 hours. C: time changed by -12 hours. D: originally given as (11). E: date changed by -5 days. F: date changed by +10 days. G: time changed by -1 hour. H: originally given as (12). I: date changed by -2 days. J: date changed by -10 days. K: time arbitrarily changed. L: originally given as (50). M: date changed by -1 month.

* * * * *

DELETED OBSERVATIONS.

The following observations are to be deleted.

Object	Date	UT	R. A. (1950)	Decl.	Reference				Obs.
2	1961 10	27.77871	22 36 20.05	-08 56 43.0	MPC 2379				073
2	1961 10	27.78564	22 36 20.04	-08 56 43.0	MPC 2379				073
2	1961 10	27.79256	22 36 20.03	-08 56 43.1	MPC 2379				073
3	1964 08	05.83592	15 26 21.94	-04 30 11.5	MPC 2959				073
3	1964 08	05.84285	15 26 21.92	-04 30 11.4	MPC 2959				073
3	1964 08	05.84978	15 26 21.91	-04 30 11.4	MPC 2959				073
4	1970 03	25.79716	09 01 56.33	+24 48 18.5	MPC 3395				073
4	1970 03	25.81863	09 01 56.33	+24 48 18.3	MPC 3395				073
5	1973 11	19.85069	02 18 44.87	+04 56 18.1	MPC 3875				990
5	1973 11	19.86458	02 18 44.87	+04 56 17.4	MPC 3875				990
6	1953 07	16.90577	19 29 42.66	-10 07 32.4	MPC 1056				021
6	1953 07	21.88475	19 24 41.29	-10 50 08.9	MPC 1056				021
6	1956 02	18.15898	14 44 02.00	+00 21 55.9	MPC 1616				084
7	1954 09	05.95135	20 56 46.52	-07 49 17.4	MPC 1205				057
7	1967 01	05.03112	08 37 23.73	+00 52 07.0	MPC 3325				020
7	1967 01	05.03320	08 37 23.60	+00 52 05.0	MPC 3325				020
7	1967 01	05.03528	08 37 23.53	+00 52 07.9	MPC 3325				020
7	1967 02	09.95567	10 37 00.69	-00 03 55.9	MPC 4700				047
7	1967 02	09.96134	10 37 00.72	-00 03 55.8	MPC 4700				047
7	1967 04	25.04529	09 55 07.40	+05 35 47.3	MPC 3318				804
7	1967 04	25.05566	09 55 07.39	+05 35 46.9	MPC 3318				804
7	1967 04	25.06606	09 55 07.41	+05 35 47.1	MPC 3319				804
10	1946 12	18.07873	06 14 41.40	+22 13 18.8	MPC 2340				047
10	1946 12	20.96513	06 11 39.28	+22 14 22.9	MPC 2340				047
11	1941 03	17.000	06 45.2	+22 40	MPC 61				031
16	1967 12	09.10560	08 33 24.41	+17 02 04.3	MPC 3326				020
16	1967 12	09.10837	08 33 24.40	+17 02 04.7	MPC 3326				020
16	1967 12	09.11114	08 33 24.37	+17 02 04.7	MPC 3326				020
17	1941 01	10.16583	09 30 57.19	+15 17 43.0	RI 2267				028
17	1942 06	22.99076	19 19 53.98	-17 50 04.3	RI 2408				028
18	1959 06	11.02653	12 26 46.21	+07 37 29.6	MPC 2191				804
18	1959 06	11.03899	12 26 46.16	+07 37 30.8	MPC 2191				804
18	1959 06	11.05146	12 26 46.18	+07 37 30.7	MPC 2191				804
18	1962 04	11.79085	09 31 04.35	+16 56 43.9	MPC 2615				073
18	1962 04	11.79847	09 31 04.39	+16 56 43.9	MPC 2615				073

18	1962	04	11.80540	09	31	04.39	+16	56	43.9	MPC 2615	073
18	1966	06	14.95353	12	40	42.34	+06	37	35.7	MPC 2860	822
18	1966	06	14.95700	12	40	42.32	+06	37	35.7	MPC 2860	822
18	1966	06	14.96047	12	40	42.35	+06	37	35.7	MPC 2860	822
18	1969	01	31.66389	10	35	21.08	+08	06	58.3	MPC 3313	323
18	1969	01	31.66979	10	35	21.09	+08	06	58.5	MPC 3313	323
18	1969	02	08.69097	10	28	51.02	+09	15	39.6	MPC 3313	323
18	1969	02	08.69688	10	28	51.00	+09	15	39.7	MPC 3313	323
18	1969	02	24.67917	10	13	35.72	+11	46	57.3	MPC 3313	323
18	1969	02	24.68507	10	13	35.72	+11	46	57.5	MPC 3313	323
22	1973	03	07.83195	11	31	22.24	+25	16	20.9	MPC 3872	990
22	1973	03	07.84583	11	31	21.51	+25	16	24.2	MPC 3872	990
29	1954	11	27.75041	04	03	21.71	+30	40	44.6	MPC 1190	021
31	1969	05	12.98881	14	09	56.42	-21	04	32.1	MPC 3419	020
31	1971	08	18.91736	22	58	54.43	-42	42	23.6	MPC 3262	076
32	1961	06	09.99931	18	52.5		-16	03		MPC 2121	990
32	1961	06	13.00972	18	48.0		-15	59		MPC 2121	990
33	1951	10	28.1	00	20.5		+03	04		MPC 729	020
33	1961	12	04.50139	04	33	49.00	+24	43	57.8	MPC 3060	388
33	1961	12	04.51528	04	33	47.77	+24	43	54.1	MPC 3060	388
33	1963	02	20.82104	09	25	35.54	+17	20	57.9	MPC 2415	006
34	1965	04	02.13472	12	27.9		-02	07		MPC 2658	808
35	1975	07	30.93513	18	47	38.12	-33	58	46.1	MPC 4858	020
35	1975	07	30.95798	18	47	38.03	-33	58	48.5	MPC 4858	020
38	1971	07	30.84380	18	08	39.35	-25	32	25.6	MPC 6359	020
38	1971	07	30.85904	18	08	38.68	-25	32	24.0	MPC 6359	020
39	1949	05	22.92539	15	59	36.80	-02	52	16.1	MPC 286	006
39	1953	04	03.84	12	20.0		+06	08		MPC 2344	056
39	1960	09	14.08333	05	22	04.02	+12	00	53.5	MPC 2727	035
39	1960	09	14.08993	05	22	04.49	+12	00	51.4	MPC 2727	035
39	1960	09	29.11528	05	34	10.34	+11	05	52.3	MPC 2366	051
39	1960	12	07.91389	05	17	03.62	+06	49	44.5	MPC 2366	051
39	1961	03	28.97211	13	42	06.93	-06	01	11.1	MPC 3186	083
39	1963	06	21.92299	16	12	25.53	-05	56	44.0	MPC 2415	006
39	1963	07	29.80910	16	01	04.53	-07	46	21.9	MPC 2757	073
39	1963	07	29.81603	16	01	04.57	-07	46	38.6	MPC 2757	073
39	1963	07	29.82711	16	01	04.52	-07	46	51.6	MPC 2757	073
39	1968	06	09.05538	19	23	00.08	-08	40	56.1	MPC 3301	057
39	1972	03	21.95100	15	41	29.25	-07	25	06.9	MPC 5151	073
39	1972	03	21.95515	15	41	29.28	-07	25	05.1	MPC 5151	073
39	1973	10	20.74029	22	02	24.34	-14	54	09.0	MPC 5152	073
39	1973	10	20.74860	22	02	24.46	-14	54	08.3	MPC 5152	073
40	1948	04	02.09525	11	27	29.25	+11	12	29.9	MPC 167	804
40	1948	04	02.9236	11	24	04.70	+11	30	56.7	MPC 174	022
40	1948	04	02.9236	11	24	04.68	+11	30	57.4	MPC 174	022
40	1948	04	03.02052	11	27	02.72	+11	18	30.6	MPC 167	804
40	1959	07	07.63258	18	25	50.49	-24	05	05.4	MPC 2224	337
40	1963	10	08.85347	01	05.2		-01	13		MPC 2318	990
40	1963	10	09.83611	01	04.2		-01	18		MPC 2318	990
40	1965	02	28.03273	11	13	35.00	+12	18	10.5	MPC 2906	084
40	1968	01	24.77926	06	57	51.49	+25	00	33.8	MPC 3402	073
40	1968	01	24.78687	06	57	51.01	+25	00	35.2	MPC 3402	073
40	1968	01	24.79449	06	57	50.53	+25	00	36.5	MPC 3402	073
40	1972	04	13.89814	12	17	23.32	+05	48	36.1	MPC 3783	128
42	1969	02	24.88860	07	05	40.67	+29	11	33.9	MPC 3420	020
42	1969	02	24.89206	07	05	40.46	+29	11	32.2	MPC 3420	020
43	1965	04	26.82500	14	29	25.29	-28	43	59.9	MPC 2556	076
44	1953	11	30.81	03	27.8		+12	25		MPC 2344	056
44	1960	09	14.68225	23	09	53.35	-09	18	05.5	MPC 2222	334

44	1962	04	19.81143	09	44	13.11	+06	55	16.9	MPC 2541	073
45	1955	02	23.94940	10	49	50.08	+09	28	35.4	MPC 2341	055
45	1960	05	20.01052	14	30	04.95	-03	48	14.8	MPC 2119	006
46	1940	02	16.0	11	49	.0	-00	40		MPC 43	020
46	1961	06	11.52	16	55	.9	-18	30		MPC 2549	388
48	1951	10	29.65485	02	28	54.55	+09	06	36.0	MPC 2336	330
48	1962	11	19.76859	02	13	20.50	+07	10	15.9	MPC 2865	073
48	1962	11	19.78867	02	13	19.99	+07	10	21.9	MPC 2865	073
49	1955	10	11.91042	01	16	01.35	+13	50	18.8	MPC 1383	990
50	1959	04	28.67002	12	51	53.85	-03	48	13.8	MPC 1940	330
52	1943	10	28.89	02	03	.0	+00	48		RI 251	073
52	1948	08	29.25938	23	59	43.65	-07	14	15.5	MPC 565	786
52	1948	08	29.27578	23	59	43.60	-07	15	37.4	MPC 565	786
52	1957	05	21.86806	15	09	06.39	-06	45	46.7	MPC 1699	990
52	1963	06	17.93750	17	47	33.01	-16	14	58.4	MPC 2318	990
52	1963	06	19.06250	17	47	26.96	-16	15	00.1	MPC 2318	990
52	1973	05	19.80056	13	23	38.20	+02	02	19.7	MPC 5155	073
52	1973	05	19.81095	13	23	37.94	+02	02	19.7	MPC 5155	073
57	1966	12	07.82708	03	31	20.31	+03	48	05.2	MPC 2733	990
57	1966	12	07.84792	03	31	20.25	+03	48	05.8	MPC 2733	990
58	1948	01	17.61875	06	20	21	+16	38	.3	MPC 214	388
58	1967	05	30.54226	15	50	34.56	-11	51	10.6	MPC 2826	420
60	1956	08	05.60	21	30	.0	-10	02		MPC 1862	388
60	1971	09	13.84350	22	27	55.39	-06	42	20.4	MPC 5106	073
60	1971	09	13.85074	22	27	54.39	-06	42	25.7	MPC 5106	073
62	1943	10	29.93229	02	02	04.19	+08	37	53.7	RI 2520	028
64	1942	09	04.93704	23	55	02.24	+00	51	27.1	RI 2423	057
67	1954	01	22.87292	07	30	50.57	+12	25	32.3	MPC 1144	990
74	1954	05	28.97292	17	31	02.13	-18	06	31.0	MPC 1145	990
80	1942	11	20.26749	09	52	10.27	+03	11	45.2	MPC 1558	839
80	1943	01	14.12692	09	57	22.12	-00	58	30.7	MPC 1558	839
85	1951	07	09.61100	19	20	09.82	-00	16	20.0	MPC 2336	330
85	1968	05	27.95609	16	17	28.30	-07	40	26.4	MPC 3301	057
90	1953	03	09.48472	09	53	05.91	+15	47	59.5	MPC 2202	388
91	1964	04	11.59109	12	13	21.07	-01	24	45.6	MPC 2535	334
92	1940	05	24.95100	14	25	27.72	-01	47	01.1	RI 2136	022
97	1962	08	28.82731	00	48	58.94	-00	42	15.2	MPC 2315	330
100	1939	10	06.07890	22	21	59.69	-16	18	01.2	MPC 607	804
104	1946	09	18.16285	22	16	07.50	-14	39	20.3	MPC 566	786
104	1946	09	18.18542	22	16	06.17	-14	39	18.2	MPC 566	786
106	1953	11	10.81229	01	18	01.50	+04	11	18.8	MPC 1065	006
108	1955	02	18.60000	11	11	57.01	+06	28	23.1	MPC 2609	388
108	1955	02	18.62604	11	11	55.54	+06	28	26.7	MPC 2609	388
110	1951	03	14.68795	10	29	41.87	+18	39	53.5	MPC 2335	330
110	1951	03	29.55756	10	21	08.59	+19	05	32.6	MPC 2335	330
110	1974	04	09.88033	12	42	20.89	+02	24	32.9	MPC 3877	012
110	1974	04	09.89557	12	42	20.73	+02	24	51.1	MPC 3877	012
116	1972	08	10.88125	22	46	59.93	-13	16	41.8	MPC 3471	076
120	1973	09	24.85360	23	05	52.24	-04	02	51.2	MPC 3977	095
121	1951	11	23.9406	03	02	27.16	+12	38	57.8	MPC 804	022
121	1951	11	23.9406	03	02	27.20	+12	38	57.9	MPC 804	022
121	1951	11	25.9581	03	00	57.35	+12	37	40.4	MPC 804	022
121	1953	01	10.65486	08	17	25.34	+26	55	52.7	MPC 2203	388
121	1953	01	10.66181	08	17	24.85	+26	55	48.7	MPC 2203	388
130	1958	07	22.59506	18	55	18.27	-02	17	06.2	MPC 1904	330
130	1964	08	20.58472	22	37	27.99	-13	51	31.8	MPC 2357	420
135	1947	09	07.01555	21	29	38.50	-15	41	53.6	MPC 122	804
135	1950	04	14.55069	12	33	29.56	-05	39	17.3	MPC 2472	388
135	1950	04	14.60208	12	33	16.31	-05	39	01.3	MPC 2472	388

135	1966	08	18.07888	23	20	22.72	-04	47	46.4	MPC 2986	012
135	1966	09	23.04424	22	51	31.23	-06	33	18.3	MPC 2986	012
137	1969	09	06.69549	23	36	14.60	+09	20	21.8	MPC 3314	323
139	1953	09	30.86736	01	32	02.80	+14	39	06.7	MPC 993	990
142	1970	07	02.85833	19	29	14.04	-22	15	54.2	MPC 3162	076
152	1961	03	23.1549	12	33	51.58	+08	09	34.0	MPC 3406	043
156	1942	09	15.97	00	21	7	+15	30		RI 2407	012
172	1951	04	04.97969	14	08	57.63	-27	28	46.2	MPC 599	077

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IDENTIFICATION CHANGES.

Continuation to MPC 17255-17256.

Object	Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
1938 EJ1 *	1938 03	05.95724	11 10 14.21	+08 21 25.7	1938 DM1		024
1939 OA *	1939 07	17.96505	19 27 10.19	-12 25 20.3	1939 NC	13.8	028
1949 MY *	1949 06	21.98443	17 10 57.41	-18 46 25.0	46		983
1949 MY	1949 06	22.91091	17 10 03.88	-18 49 59.7	46		983
1951 CE2 *	1951 02	10.40265	09 48.9	+13 05	28	12.7	760
1954 QX *	1954 08	25.97708	00 41.4	+04 16	41		990
1954 QX	1954 08	27.93750	00 40.7	+04 04	41		990
1958 SA *	1958 09	18.88681	23 34.4	-03 54	37		990
1959 NT *	1959 07	08.96014	19 39 41.14	+00 20 32.3	8		073
1959 NT	1959 07	08.97399	19 39 40.56	+00 20 31.7	8		073
1960 TC *	1960 10	14.88333	23 30.6	+01 51	85		990
1961 WG *	1961 11	30.84570	03 03 11.18	+11 10 58.0	20		006
1970 OL *	1970 07	29.90622	19 56 54.27	-19 46 13.3	1970 NH	16.5	095
1974 VK3 *	1974 11	15.89948	03 20 28.52	+14 24 19.5	79		095
1975 EF6 *	1975 03	15.87869	10 55 54.59	+07 49 53.0	1975 EO1	17.5	095
1976 WE1 *	1976 11	24.30384	06 55 17.88	+07 56 33.6	136		805
1978 TT9 *	1978 10	04.04780	02 30 34.88	+15 34 53.6	1978 SM6	17.0	095
1979 ST12*	1979 09	28.89674	00 06 46.56	+08 35 48.2	1979 SY1	17.0	095
1981 JL3 *	1981 05	05.37500	15 03 39.30	-19 37 43.2	1981 JV2	18	675
1983 EK4 *	1983 03	09.24931	10 58 30.86	+13 40 30.3	1983 DF	17.0	688
1983 EK4	1983 03	09.28056	10 58 29.14	+13 40 31.4	1983 DF		688
1986 TJ18*	1986 10	02.87262	23 44 23.03	-00 32 30.4	1986 RK7	16.0V	095
1986 TK18*	1986 10	08.84440	23 40 22.62	-02 43 46.9	1986 TD9	16.0V	095
1990 SZ10*	1990 09	20.33009	23 39 40.92	-02 22 13.3	1990 RP1	17.5	675
1990 SZ10	1990 09	20.36094	23 39 39.00	-02 22 16.3	1990 RP1		675
1990 UR5 *	1990 10	20.24444	03 04 27.98	+09 58 32.3	1989 TO1	18.7	809
1990 UR5	1990 10	20.27083	03 04 26.68	+09 58 31.2	1989 TO1		809

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IDENTIFICATIONS.

The following list of identifications with numbered minor planets, by G. V. Williams, continues that on MPC 17256.

1949 MY = (369) 1951 CE2 = (53) 1954 QX = (51)
1958 SA = (75) 1959 NT = (57) 1960 TC = (247)
1961 WG = (206)

OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

006 Fabra Observatory. 0.38-m f/11 Mailhat astrograph. Observer J. M. Codina. Measured by N. Torras.
026 Zimmerwald. Observers P. Wild and U. Hugentobler.
046 Klet. Observer A. Mrkos.
056 Skalnate Pleso. 0.3-m f/5 astrograph. Observers G. Cervak, J. Fabricius, L. Kornos, E. M. Pittich, P. Rychtarcik and J. Svoren.
091 Observatoire de Nurol. Observer R. Chanal.
095 Crimean Astrophysical Observatory. Observers L. G. Karachkina.
190 Gissar. 0.4-m astrograph. Observer S. I. Gerasimenko.
372 Geisei. 0.60-m reflector. Observer T. Seki.
373 JCPM Oishi Station. Observer M. Tsumura. Measured by S. Hayakawa and M. Takeishi. In part from JCPM Hamatonbetsu Station Report.
391 Sendai Observatory Ayashi Station. 0.30-m reflector. Observer M. Koishikawa.
399 Kushiro. Observer M. Matsuyama. Measured by H. Kaneda.
401 Oosato. 0.20-m f/6.0 reflector. Observer Y. Yamagishi. Measured by S. Hayakawa.
409 Mizuho. 0.25-m f/5.4 reflector. Observer T. Hioki. Long. and Parallax 139.37, -346, -248 (see MPC 16637).
411 Oizumi. 0.16-m f/4.8 reflector. Observer T. Kobayashi. Measured by T. Kobayashi and S. Hayakawa. Long. and Parallax 139.42, -345, -250 (see MPC 16637).
412 Iwaki. 0.30-m f/5.7 reflector. Observer M. Tanaka. Long. and Parallax 140.58, -341, -255 (see MPC 16637).
413 Siding Spring. 1.2-m and Uppsala Southern Schmidts. Observers R. D. Eberst, R. H. McNaught and P. McKenzie. Measured by R. H. McNaught.
415 Kambah, near Canberra. Observer D. Herald.
494 Stakenbridge. Observer B. Manning.
503 Cambridge. Observer J. D. Shanklin.
540 Linz. Observers E. Meyer, E. Obermair and H. Raab.
568 Mauna Kea. IRTF encoders. Observers D. J. Tholen, W. K. Hartmann and C. Kaminski.
587 Sormano. 0.20-m f/5 astrograph. Observers E. Colzani, G. Ventre, M. Cavagna and P. Sicoli.
595 Farra D'Isonzo. 0.4-m f/4.5 reflector. Observers F. Piani and L. Bittesini. Long. and Parallax 13.53, -299, -305 (see MPC 16637).
675 Palomar. 0.46-m Schmidt. Observers J. A. Brown, H. E. Holt, H. R. Holt and C. M. Olmstead. Measured by C. M. Olmstead.
688 Lowell Observatory, Anderson Mesa Station. 1.1-m f/8 reflector + CCD. Observer B. A. Skiff.
801 Oak Ridge Observatory. 1.5-m reflector + CCD. Observers R. E. McCrosky and C.-Y. Shao.
871 Akou. 0.20-m f/4.8 reflector. Observer K. Kawanishi.
875 Yorii. 0.30-m f/3.8 camera. Observers M. Arai and H. Mori. Measurers H. Kosai and G. Sasaki.
896 Yatsugatake South Base Observatory. 0.20-m f/4.0 reflector. Observers Y. Kushida and O. Muramatsu. Measured by O. Muramatsu.
897 Chiyoda and Tatebayashi. Observers T. Kojima and T. Ohtsuka. Measured by T. Kojima.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
		Periodic Comet Tempel 2				
/1983 X	1983	07 19.02951	02 00 36.33	-00 10 27.7		056
/1983 X	1983	07 19.03750	02 00 37.60	-00 10 27.7		056

Periodic Comet Tempel 1

/1983 XI	1983	04	30.87500	12	35	42.40	+14	11	44.9	056
/1983 XI	1983	05	14.87106	12	31	34.20	+11	08	09.2	056
/1983 XI	1983	05	14.92546	12	31	33.99	+11	07	16.6	056

Comet Cernis (1983 XII)

/1983 XII	1983	08	16.02292	02	33	42.09	+04	46	23.6	056
/1983 XII	1983	08	16.05069	02	33	41.07	+04	45	48.2	056
/1983 XII	1983	09	08.98912	02	08	44.26	-04	20	49.5	056
/1983 XII	1983	09	09.03681	02	08	40.07	-04	22	05.5	056
/1983 XII	1983	10	14.97813	01	01	48.63	-20	22	49.0	056
/1983 XII	1983	10	15.00347	01	01	45.40	-20	23	23.3	056

Periodic Comet Kopff

/1983 XIII	1983	05	14.96875	15	39	02.75	-09	22	51.8	056
/1983 XIII	1983	05	14.98958	15	39	02.12	-09	22	49.4	056
/1983 XIII	1983	05	15.85972	15	38	32.24	-09	21	01.8	056
/1983 XIII	1983	05	16.89722	15	37	55.58	-09	19	01.4	056
/1983 XIII	1983	05	17.84722	15	37	21.71	-09	17	18.8	056
/1983 XIII	1983	05	17.87500	15	37	20.75	-09	17	15.0	056
/1983 XIII	1983	07	31.85833	15	59	23.01	-17	08	25.3	056

Periodic Comet IRAS

/1983 XIV	1983	09	08.91273	01	08	15.92	+17	39	18.7	056
/1983 XIV	1983	09	08.93750	01	08	12.53	+17	40	27.4	056
/1983 XIV	1983	09	15.91979	00	50	27.11	+23	09	17.9	056
/1983 XIV	1983	09	15.95174	00	50	21.47	+23	10	45.6	056
/1983 XIV	1983	09	29.77847	00	07	26.28	+32	29	15.5	056
/1983 XIV	1983	09	29.82604	00	07	17.20	+32	30	48.4	056
/1983 XIV	1983	10	01.86505	00	00	36.28	+33	36	07.3	056
/1983 XIV	1983	10	05.80417	23	47	52.71	+35	27	50.2	056
/1983 XIV	1983	10	05.83738	23	47	46.25	+35	28	42.1	056
/1983 XIV	1983	11	02.77326	22	44	16.55	+41	33	55.0	056
/1983 XIV	1983	11	02.83773	22	44	11.91	+41	34	13.6	056
/1983 XIV	1983	11	06.72338	22	40	15.72	+41	50	54.5	056
/1983 XIV	1983	11	06.78368	22	40	12.67	+41	51	08.4	056
/1983 XIV	1983	11	07.74618	22	39	25.02	+41	54	45.0	056
/1983 XIV	1983	11	07.79421	22	39	22.64	+41	54	54.7	056
/1983 XIV	1983	11	08.78044	22	38	38.40	+41	58	28.3	056
/1983 XIV	1983	11	08.81703	22	38	36.54	+41	58	33.5	056

Comet Shoemaker (1983 XV)

/1983 XV	1983	09	29.79479	23	07	02.02	+11	03	38.9	056
/1983 XV	1983	09	29.84097	23	06	56.88	+11	02	25.3	056
/1983 XV	1983	10	01.83623	23	03	05.40	+10	06	48.8	056
/1983 XV	1983	10	01.87963	23	03	00.23	+10	05	35.2	056
/1983 XV	1983	10	05.78345	22	55	42.86	+08	16	59.1	056
/1983 XV	1983	10	05.82211	22	55	38.66	+08	15	58.2	056
/1983 XV	1983	10	07.83345	22	52	02.39	+07	20	28.2	056
/1983 XV	1983	10	07.85764	22	51	59.54	+07	19	46.1	056
/1983 XV	1983	10	10.89479	22	46	45.63	+05	57	00.4	056

Periodic Comet Russell 1

/1984 I	1984	03	31.99595	13	19	24.07	+01	54	27.4	056
/1984 I	1984	04	01.05625	13	19	21.64	+01	54	39.6	056

Comet Austin (1984 XIII)

/1984 XIII	1984	09	30.11076	07	34	55.74	+40	24	11.9	056
/1984 XIII	1984	09	30.13785	07	34	47.14	+40	25	18.1	056

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/1984 XIII 1984 10 01.04410  07 30 03.07  +40 59 52.7                    056
/1984 XIII 1984 10 01.10405  07 29 43.40  +41 02 18.3                    056
/1984 XIII 1984 10 25.90313  03 36 18.27  +47 53 39.3                  1 056

                Periodic Comet Shoemaker 1
/1984 XVI  1984 10 31.96146  22 50 28.70  +21 17 12.1                    056
/1984 XVI  1984 12 14.73993  23 22 39.13  +24 56 28.1                    056
/1984 XVI  1984 12 14.78993  23 22 42.66  +24 56 45.1                    056

                Periodic Comet Neujmin 1
/1984 XIX  1984 11 13.70660  21 22 09.54  -11 56 58.6                    056

                Periodic Comet Arend-Rigaux
/1984 XXI  1984 11 22.01076  08 04 34.59  -01 50 09.3                    056
/1984 XXI  1984 11 22.07674  08 04 42.30  -01 49 47.3                    056

                Periodic Comet Schaumasse
/1984 XXII 1984 10 29.14063  10 04 05.26  +16 40 52.8                    056

                Comet Levy-Rudenko (1984 XXIII)
/1984 XXIII1984 12 12.68681  18 35 20.09  +25 03 07.4                    056
/1984 XXIII1984 12 12.71667  18 35 18.89  +25 04 05.3                    056
/1984 XXIII1984 12 14.69757  18 34 09.82  +26 09 46.9                    056
/1984 XXIII1984 12 14.71875  18 34 09.12  +26 10 26.8                    056

                Comet Shoemaker (1985 II)
/1985 II   1984 11 21.80278  02 06 17.58  +05 53 55.1                    056
/1985 II   1984 12 01.76921  02 17 55.38  -00 21 55.1                    056
/1985 II   1984 12 01.80706  02 17 58.59  -00 23 22.2                    056
/1985 II   1984 12 14.76458  02 43 52.57  -08 14 18.3                    056
/1985 II   1984 12 14.81250  02 43 59.72  -08 15 52.5                    056

                Periodic Comet Halley
/1986 III  1986 12 08.83021  11 38 40.92  -15 22 34.0           14  T    373
/1986 III  1986 12 08.83785  11 38 40.66  -15 22 34.1                    373
/1986 III  1987 03 26.50069  10 07 08.26  -10 32 32.4                    373

                Periodic Comet Lovas 2
/1986 XIII 1986 12 05.48090  01 51 30.93  +13 54 50.2           15  T    373
/1986 XIII 1986 12 05.50862  01 51 32.03  +13 54 48.3                    373

                Periodic Comet Urata-Niijima
/1986 XVI  1986 11 21.45260  01 23 18.13  +34 01 54.3                    373
/1986 XVI  1986 12 02.44757  01 13 39.91  +39 27 45.0                    373
/1986 XVI  1986 12 02.45457  01 13 39.64  +39 27 56.4                    373

                Comet Terasako (1986 XVIII)
/1986 XVIII1987 01 28.40289  23 45 04.38  -28 10 33.7                    373
/1986 XVIII1987 01 28.40602  23 45 05.52  -28 10 27.8                    373

                Comet Sorrells (1987 II)
/1987 II   1986 11 04.57292  05 26 41.09  +27 27 01.1                    373
/1987 II   1987 01 27.44800  23 50 20.72  +11 31 25.6                    373
/1987 II   1987 01 28.43490  23 49 37.19  +11 25 49.4                    373
/1987 II   1987 01 28.44005  23 49 36.91  +11 25 47.1                    373
/1987 II   1987 02 20.42292  23 39 18.92  +10 14 05.9                    373
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Comet Nishikawa-Takamizawa-Tago (1987 III)

/1987 III	1987	01	27.43472	23	52	40.70	+04	02	36.4		373
/1987 III	1987	01	28.42781	23	51	24.91	+03	44	10.1		373

Comet Wilson (1987 VII)

/1987 VII	1986	10	20.39236	20	05	59.69	+03	31	27.0		373
/1987 VII	1986	10	20.40451	20	05	59.32	+03	31	18.9		373
/1987 VII	1986	10	23.43767	20	03	15.68	+02	31	26.3		373
/1987 VII	1986	11	04.45947	19	55	12.80	-01	07	07.6		373
/1987 VII	1986	11	21.41250	19	50	16.70	-05	24	42.8		373
/1987 VII	1986	12	02.40747	19	50	15.61	-07	44	04.9		373
/1987 VII	1986	12	22.39340	19	54	52.44	-11	15	52.8		373

Periodic Comet Schwassmann-Wachmann 2

/1987 XIX	1986	12	05.49178	01	35	47.81	+04	28	47.1		373
/1987 XIX	1986	12	05.49878	01	35	47.66	+04	28	49.0		373
/1987 XIX	1986	12	22.43252	01	34	33.95	+04	50	55.1		373
/1987 XIX	1986	12	22.46181	01	34	34.03	+04	50	59.2		373

Periodic Comet Kopff

/1988k	1990	10	23.25052	01	58	18.90	+04	23	46.4	15.6N	688
/1988k	1990	10	23.25388	01	58	18.72	+04	23	45.5		688
/1988k	1990	10	23.25635	01	58	18.59	+04	23	44.6		688
/1988k	1990	10	24.22171	01	57	25.59	+04	19	20.8	15.6N	688
/1988k	1990	10	24.22534	01	57	25.37	+04	19	19.6		688
/1988k	1990	10	25.23028	01	56	30.49	+04	14	51.2	15.6N	688
/1988k	1990	10	25.23361	01	56	30.30	+04	14	50.5		688
/1988k	1990	10	25.24718	01	56	29.52	+04	14	46.6		688
/1988k	1990	10	25.24957	01	56	29.41	+04	14	46.1		688
/1988k	1990	10	26.24843	01	55	35.18	+04	10	25.6	15.7N	688
/1988k	1990	10	26.25171	01	55	34.99	+04	10	24.4		688
/1988k	1990	12	06.06980	01	31	57.33	+03	03	45.7	17.1N	688
/1988k	1990	12	06.07353	01	31	57.28	+03	03	45.1		688
/1988k	1990	12	06.10353	01	31	56.97	+03	03	47.4		688
/1988k	1990	12	06.10713	01	31	56.95	+03	03	47.5		688
/1988k	1990	12	07.10421	01	31	47.98	+03	05	05.2	17.2N	688
/1988k	1990	12	07.10774	01	31	47.98	+03	05	05.5		688
/1988k	1990	12	07.11036	01	31	48.01	+03	05	05.3		688

Periodic Comet Gunn

/1976 III	1976	05	27.77018	21	37	01.86	-24	25	08.8	2	413
/1989 XI	1990	09	17.30556	23	47	56.59	-17	20	09.3	16.5T	675
/1989 XI	1990	09	17.33941	23	47	54.92	-17	20	17.0		675
/1989 XI	1990	09	19.30417	23	46	24.84	-17	26	35.9	16.5T	675
/1989 XI	1990	09	19.33472	23	46	23.37	-17	26	41.8		675
/1989 XI	1990	09	24.55132	23	42	27.90	-17	40	36.6		413

Periodic Comet Schwassmann-Wachmann 1

/1989 XV	1990	10	12.92882	01	31	31.45	+21	17	58.7	17.0T	046
/1989 XV	1990	10	12.94236	01	31	30.86	+21	17	55.3		046
/1989 XV	1990	10	13.88993	01	31	03.92	+21	15	56.4		046
/1989 XV	1990	10	13.90278	01	31	03.57	+21	15	55.4		046
/1989 XV	1990	10	15.22319	01	30	25.62	+21	13	03.5		801
/1989 XV	1990	10	15.24450	01	30	24.98	+21	13	00.7		801
/1989 XV	1990	10	16.84815	01	29	39.05	+21	09	25.7	16.7T	046
/1989 XV	1990	10	16.86094	01	29	38.50	+21	09	23.2		046
/1989 XV	1990	11	12.56001	01	17	45.38	+19	56	12.4	14 T 3	897
/1989 XV	1990	11	12.59716	01	17	44.49	+19	56	03.8		897
/1989 XV	1990	11	14.13010	01	17	10.77	+19	51	36.8		801

/1989 XV	1990	11	14.79771	01	16	56.82	+19	49	33.1	15	T	095
/1989 XV	1990	11	14.81194	01	16	56.20	+19	49	35.2			095
/1989 XV	1990	11	21.17954	01	14	50.91	+19	31	12.4			801
/1989 XV	1990	11	21.58131	01	14	43.71	+19	30	05.4	15	T	897
/1989 XV	1990	11	21.61123	01	14	43.15	+19	30	00.4			897
/1989 XV	1990	11	23.44554	01	14	12.08	+19	24	51.8	15	T 3	897
/1989 XV	1990	11	23.49473	01	14	11.10	+19	24	42.5			897
/1989 XV	1990	12	15.03706	01	10	46.90	+18	34	05.6			801
/1989 XV	1990	12	15.11919	01	10	46.69	+18	33	56.2			801
			Periodic Comet Wild 2									
/1984 XIV	1984	01	26.76956	03	51	08.14	+16	34	06.4			056
/1984 XIV	1984	01	26.82685	03	51	08.23	+16	34	15.6			056
/1989t	1990	10	19.81128	11	06	19.40	+06	04	04.9	14	T	897
/1989t	1990	11	12.79919	12	11	56.71	-00	20	08.6	14	T	897
/1989t	1990	11	12.81973	12	12	00.46	-00	20	31.3			897
/1989t	1990	11	22.81875	12	39	48.63	-03	02	51.2			412
/1989t	1990	12	16.83802	13	47	12.14	-09	09	07.6	13	T	897
/1989t	1990	12	16.86372	13	47	16.32	-09	09	29.1			897
/1989t	1990	12	19.81389	13	55	33.51	-09	50	25.9	13.5	T	372
/1989t	1990	12	21.82813	14	01	11.98	-10	17	41.5	13.5	T	372
			Periodic Comet Kearns-Kwee									
/1989u	1990	11	12.61302	07	12	49.10	+32	51	39.6	15.5	T	897
/1989u	1990	11	12.63547	07	12	49.62	+32	51	39.4			897
/1989u	1990	11	12.78970	07	12	54.74	+32	51	36.1			897
/1989u	1990	11	12.82749	07	12	56.00	+32	51	38.8			897
/1989u	1990	11	14.33866	07	13	44.90	+32	51	09.5			801
/1989u	1990	11	14.37875	07	13	46.00	+32	51	08.7			801
/1989u	1990	11	20.31916	07	16	10.15	+32	49	09.6			801
/1989u	1990	11	20.34926	07	16	10.61	+32	49	08.7			801
/1989u	1990	12	08.56389	07	15	32.93	+32	36	26.8	15	T	897
/1989u	1990	12	08.59560	07	15	32.04	+32	36	30.3			897
/1989u	1990	12	12.68924	07	13	48.6	+32	30	56	15.5	T	896
/1989u	1990	12	12.73021	07	13	47.5	+32	30	54			896
/1989u	1990	12	13.27432	07	13	31.66	+32	30	03.0			801
/1989u	1990	12	13.30198	07	13	30.77	+32	30	00.3			801
/1989u	1990	12	13.55602	07	13	23.35	+32	29	34.3	15	T	897
/1989u	1990	12	13.59196	07	13	22.21	+32	29	32.2			897
/1989u	1990	12	15.30368	07	12	27.02	+32	26	38.4			801
/1989u	1990	12	17.24808	07	11	19.17	+32	23	01.3			801
/1989u	1990	12	21.58264	07	08	28.52	+32	13	28.1	14	T	875
/1989u	1990	12	21.60278	07	08	27.65	+32	13	25.1			875
/1989u	1990	12	24.58958	07	06	17.12	+32	05	30.7	14	T	372
/1989u	1990	12	24.60139	07	06	16.49	+32	05	29.2			372
/1989u	1990	12	24.61875	07	06	15.65	+32	05	26.2			372
/1989u	1990	12	25.94850	07	05	14.99	+32	01	30.2			494
			Comet Austin (1989c1)									
/1989c1	1990	04	27.12751	00	26	34.04	+35	58	57.3			587
/1989c1	1990	04	29.12023	00	15	59.93	+35	55	42.0			587
			Comet Skorichenko-George (1989e1)									
/1989e1	1990	04	27.84549	03	50	02.23	+37	52	04.8			587
			Comet Levy (1990c)									
/1990c	1990	07	13.90000	23	59	37.85	+29	39	47.5			595
/1990c	1990	07	13.91388	23	59	37.13	+29	39	44.3			595
/1990c	1990	07	14.92569	23	58	40.67	+29	38	37.5			595

/1990c	1990	07	14.95625	23	58	38.75	+29	38	32.8		595
/1990c	1990	07	31.83434	23	25	59.39	+27	43	06.6		190
/1990c	1990	07	31.88120	23	25	50.21	+27	42	20.8		190
/1990c	1990	08	03.08160	23	17	55.83	+27	01	42.7		091
/1990c	1990	08	03.11597	23	17	47.66	+27	01	02.6		091
/1990c	1990	08	17.89618	21	38	02.34	+14	02	18.0		091
/1990c	1990	08	17.93924	21	37	34.94	+13	57	48.1		091
/1990c	1990	08	17.94201	21	37	33.23	+13	57	31.8		091
/1990c	1990	08	18.88160	21	27	26.59	+12	15	10.4		091
/1990c	1990	08	18.88507	21	27	24.31	+12	14	47.5		091
/1990c	1990	08	18.91146	21	27	06.75	+12	11	48.2		091
/1990c	1990	08	19.01406	21	25	58.08	+12	00	02.6		091
/1990c	1990	08	19.91146	21	15	47.07	+10	13	13.8		091
/1990c	1990	08	19.91425	21	15	45.38	+10	12	50.7		091
/1990c	1990	08	20.03715	21	14	18.64	+09	57	38.6		091
/1990c	1990	08	26.84792	19	45	50.49	-06	47	57.5		006
/1990c	1990	08	26.85139	19	45	47.71	-06	48	31.1		006
/1990c	1990	09	02.83333	18	16	20.80	-22	16	07.1		006
/1990c	1990	09	02.84375	18	16	13.54	-22	17	11.6		006
/1990c	1990	09	03.87777	18	04	47.09	-23	56	59.2		006
/1990c	1990	09	03.88749	18	04	40.51	-23	57	53.0		006
/1990c	1990	09	10.47234	17	05	21.92	-31	14	46.0		415
/1990c	1990	09	17.47536	16	23	32.88	-35	06	46.8		415
/1990c	1990	09	18.45776	16	18	57.71	-35	28	51.1		415
/1990c	1990	09	20.39670	16	10	37.0	-36	07	32		897
/1990c	1990	09	20.39797	16	10	36.6	-36	07	31		897
/1990c	1990	09	20.40012	16	10	36.1	-36	07	36		897
/1990c	1990	09	20.40671	16	10	34.6	-36	07	41		897
/1990c	1990	10	10.43232	15	16	53.17	-39	26	05.3		415
/1990c	1990	11	28.73370	14	12	52.38	-40	35	49.1		413
/1990c	1990	12	16.84780	13	48	14.6	-40	35	48		897
/1990c	1990	12	16.85984	13	48	13.50	-40	35	50.4		897
/1990c	1990	12	27.86458	13	27	07.00	-40	24	09.9		411
/1990c	1990	12	27.86615	13	27	06.60	-40	24	10.9		411

Periodic Comet Wolf-Harrington

/1990e	1990	11	14.98110	22	30	27.08	+15	28	30.9		801
/1990e	1990	11	16.98089	22	31	55.23	+15	10	29.5		801
/1990e	1990	11	20.98939	22	35	15.75	+14	36	38.3		801
/1990e	1990	11	10.41291	22	27	35.92	+16	12	18.5	14.5T	897
/1990e	1990	11	10.44850	22	27	37.28	+16	11	59.5		897
/1990e	1990	11	12.53293	22	28	50.02	+15	51	35.1	14 T	897
/1990e	1990	11	12.56869	22	28	50.73	+15	51	14.8		897
/1990e	1990	12	19.94508	23	13	11.63	+12	11	19.6		801
/1990e	1990	12	19.96416	23	13	13.71	+12	11	15.0		801
/1990e	1990	12	19.96801	23	13	14.09	+12	11	14.9		801

Comet Tsuchiya-Kiuchi (1990i)

/1990i	1990	10	19.80185	10	48	18.45	-03	20	37.9		897
/1990i	1990	10	19.82575	10	48	16.61	-03	21	18.0		897
/1990i	1990	10	19.82911	10	48	16.46	-03	21	26.6		897
/1990i	1990	10	19.83420	10	48	16.02	-03	21	33.5		897
/1990i	1990	11	12.78154	09	59	03.91	-19	01	42.6		897
/1990i	1990	11	12.78449	09	59	03.35	-19	01	51.5		897
/1990i	1990	11	12.81412	09	58	57.16	-19	03	24.8		897
/1990i	1990	11	22.75486	09	14	43.9	-28	45	17		412
/1990i	1990	12	24.54479	04	21	05.05	-41	43	17.5	8 T	372
/1990i	1990	12	24.55000	04	21	02.57	-41	43	08.4		372
/1990i	1990	12	24.55486	04	21	00.42	-41	42	59.5		372

Periodic Comet Mueller 2

/1990j	1990	09	20.56730	00	42	51.57	+12	07	01.4		16	T	897
/1990j	1990	09	20.60631	00	42	50.26	+12	06	55.2				897
/1990j	1990	10	21.66325	00	28	15.22	+08	00	29.0		14	T	409
/1990j	1990	10	26.60174	00	26	46.23	+07	19	50.0		14	T	409
/1990j	1990	11	14.07678	00	26	37.49	+05	22	41.5				801
/1990j	1990	11	14.08985	00	26	37.66	+05	22	38.0				801
/1990j	1990	11	19.14446	00	28	14.73	+05	03	15.2				801
/1990j	1990	12	06.43090	00	39	05.48	+04	42	06.9		17.0	T	372
/1990j	1990	12	06.44514	00	39	06.24	+04	42	06.3				372

Periodic Comet Holt-Olmstead

/1990k	1990	11	14.10874	00	50	25.03	+14	25	41.9				801
/1990k	1990	11	14.13485	00	50	24.36	+14	25	50.4				801
/1990k	1990	11	19.10515	00	48	56.97	+14	53	18.5				801
/1990k	1990	11	19.14817	00	48	56.34	+14	53	32.8				801
/1990k	1990	12	06.45972	00	50	41.08	+16	36	17.7		17	T	372
/1990k	1990	12	06.47326	00	50	41.54	+16	36	22.9				372
/1990k	1990	12	07.52049	00	51	06.81	+16	43	02.9		17	T	372

Periodic Comet Mueller 3

/1990l	1990	11	14.11650	01	09	47.71	-05	41	30.2				801
/1990l	1990	11	14.15161	01	09	46.97	-05	41	29.8				801
/1990l	1990	12	07.48542	01	07	45.94	-04	56	09.4		18.5	T	372

Periodic Comet Taylor

/1990n	1990	12	13.29578	07	37	05.59	+14	11	56.0				801
/1990n	1990	12	13.30809	07	37	05.30	+14	12	08.0				801
/1990n	1990	12	17.27241	07	36	25.61	+15	12	60.0				801
/1990n	1990	12	17.29046	07	36	25.55	+15	13	17.4				801
/1990n	1990	12	19.66319	07	35	47.65	+15	52	14.8		18.5	T	372
/1990n	1990	12	24.63056	07	33	56.03	+17	19	11.6		18	T	372
/1990n	1991	01	06.55799	07	26	26.08	+21	29	53.0		16.5	T	372

Periodic Comet Shoemaker-Levy 1

/1990o	1990	10	24.59975	02	10	22.6	-14	24	58		14	T	4		897
/1990o	1990	11	21.60139	01	45	42.05	+03	14	26.6		14	T			372
/1990o	1990	12	06.48472	01	44	42.58	+10	37	41.6		14.5	T			372
/1990o	1990	12	06.50556	01	44	42.69	+10	38	12.3						372
/1990o	1990	12	06.50770	01	44	42.79	+10	38	18.2						373
/1990o	1990	12	06.51881	01	44	42.79	+10	38	35.8						373
/1990o	1990	12	06.74502	01	44	46.35	+10	44	35.2						046
/1990o	1990	12	06.75920	01	44	46.40	+10	45	01.1						046
/1990o	1990	12	07.74145	01	45	00.56	+11	10	14.3						046
/1990o	1990	12	07.75273	01	45	00.86	+11	10	31.5						046
/1990o	1990	12	08.74127	01	45	17.48	+11	35	46.9						046
/1990o	1990	12	08.75273	01	45	17.82	+11	36	04.7						046
/1990o	1990	12	14.04054	01	47	19.67	+13	43	26.8						801
/1990o	1990	12	14.05219	01	47	20.00	+13	43	42.8						801
/1990o	1990	12	15.05112	01	47	49.24	+14	06	30.6						801
/1990o	1991	01	05.86417	02	05	19.17	+21	02	00.0		15	T			540
/1990o	1991	01	05.89514	02	05	21.80	+21	02	36.8						540

Periodic Comet Shoemaker-Levy 2

/1990p	1990	12	07.11403	01	47	01.30	+11	51	29.2		17.0	N	5		688
/1990p	1990	12	07.11742	01	47	01.42	+11	51	29.0				5		688
/1990p	1990	12	07.53646	01	47	17.09	+11	51	13.4		16.5	N			372
/1990p	1990	12	07.57361	01	47	17.79	+11	51	12.9						372

/1990p	1990	12	11.44184	01	49	59.50	+11	50	31.6		17.7N		568
/1990p	1990	12	12.40278	01	50	42.97	+11	50	48.2		17.6N		568
/1990p	1990	12	15.05493	01	52	49.59	+11	52	24.6				801
/1990p	1990	12	15.07186	01	52	50.40	+11	52	25.3				801
/1990p	1990	12	18.48140	01	55	46.62	+11	56	32.4				413

Periodic Comet Metcalf-Brewington

/1991a	1991	01	05.45162	00	01	48.24	-06	34	39.2		15	T 4	412
/1991a	1991	01	05.48773	00	01	53.49	-06	34	15.8		15	T 4	412
/1991a	1991	01	07.44002	00	07	03.33	-06	13	14.2		8.5T		897
/1991a	1991	01	07.44341	00	07	03.80	-06	13	11.1				897
/1991a	1991	01	08.47812	00	09	47.96	-06	01	45.4			6	413
/1991a	1991	01	08.80694	00	10	40.44	-05	58	14.4		8.5T		026
/1991a	1991	01	09.41215	00	12	16.82	-05	51	31.0				411
/1991a	1991	01	09.41389	00	12	17.15	-05	51	30.3				411
/1991a	1991	01	09.45139	00	12	23.08	-05	50	58.1			6	413
/1991a	1991	01	09.47448	00	12	26.65	-05	50	43.8			6	413
/1991a	1991	01	09.49941	00	12	30.66	-05	50	32.7		8.0T		372
/1991a	1991	01	09.50625	00	12	31.74	-05	50	27.0				372
/1991a	1991	01	09.79757	00	13	18.28	-05	47	15.5				026
/1991a	1991	01	10.42367	00	14	58.32	-05	40	12.2		8	T	897
/1991a	1991	01	10.44034	00	15	01.09	-05	40	00.9				897
/1991a	1991	01	10.45556	00	15	03.36	-05	39	50.5				401
/1991a	1991	01	10.46227	00	15	04.38	-05	39	46.3				401
/1991a	1991	01	10.77808	00	15	55.07	-05	36	12.0				503
/1991a	1991	01	11.47708	00	17	46.68	-05	28	08.2				415
/1991a	1991	01	11.48839	00	17	48.47	-05	28	00.2				415

Comet Arai (1991b)

/1991b	1990	12	23.65113	09	15	09.42	-11	05	29.8		10	T 4	897
/1991b	1990	12	23.65453	09	15	09.53	-11	05	04.6			4	897
/1991b	1991	01	06.61840	08	52	15.09	+14	17	17.2				875
/1991b	1991	01	06.62708	08	52	13.84	+14	18	28.3				875
/1991b	1991	01	07.50659	08	50	07.38	+16	14	47.0		10	T 3	413
/1991b	1991	01	07.53333	08	50	02.8	+16	17	57		10	T	896
/1991b	1991	01	07.54809	08	50	01.0	+16	20	04				896
/1991b	1991	01	07.62049	08	49	49.88	+16	29	36.8		11	T	875
/1991b	1991	01	07.63194	08	49	48.36	+16	31	07.0				875
/1991b	1991	01	07.66690	08	49	42.75	+16	36	04.5			3	413
/1991b	1991	01	07.75989	08	49	28.51	+16	48	08.0		9.5T		372
/1991b	1991	01	08.50231	08	47	36.95	+18	27	16.6				413
/1991b	1991	01	08.51811	08	47	34.42	+18	29	05.2				897
/1991b	1991	01	08.52454	08	47	33.40	+18	29	58.0		10	T	897
/1991b	1991	01	08.53692	08	47	31.42	+18	31	36.5				897
/1991b	1991	01	08.96597	08	46	24.08	+19	28	52.1		11	T	540
/1991b	1991	01	08.97743	08	46	22.18	+19	30	24.6				540
/1991b	1991	01	09.51667	08	44	56.60	+20	42	36.5		10	T	399
/1991b	1991	01	09.60313	08	44	42.32	+20	54	09.5				875
/1991b	1991	01	09.61701	08	44	40.02	+20	56	02.1				875
/1991b	1991	01	09.79826	08	44	09.53	+21	20	15.4		10.5T		372
/1991b	1991	01	10.73507	08	41	33.75	+23	25	23.8				391
/1991b	1991	01	10.74549	08	41	31.94	+23	26	47.0				391
/1991b	1991	01	10.81973	08	41	18.84	+23	36	38.9		12	T	409
/1991b	1991	01	10.82731	08	41	17.35	+23	37	41.1		12	T	409
/1991b	1991	01	10.85382	08	41	12.86	+23	41	13.6				391
/1991b	1991	01	11.95794	08	38	01.66	+26	07	35.4				503
/1991b	1991	01	12.57326	08	36	10.53	+27	28	27.5		10.0T		871
/1991b	1991	01	12.58299	08	36	08.57	+27	29	42.4		10.0T		871

Periodic Comet Swift-Gehrels

/1991c	1991	01	07.39167	22	12	00.12	-05 30 29.5	16.5T	372
/1991c	1991	01	07.41500	22	12	03.56	-05 30 02.4		372
/1991c	1991	01	12.40747	22	25	42.59	-03 59 01.4	17.0T	372
/1991c	1991	01	13.38924	22	28	26.18	-03 40 44.4	17.0T	372
/1991c	1991	01	13.39896	22	28	27.58	-03 40 30.7		372
/1991c	1991	01	13.41042	22	28	29.68	-03 40 17.5		372
/1991c	1991	01	13.42326	22	28	31.79	-03 40 02.5		372

Note 1: poor sky. 2: narrow 40’ tail in p.a. 250 . 3: strong condensation. 4: prediscovery image. 5: straight, diffuse tail, 29" long in p.a. 67 ; object originally designated 1990 UL3. 6: central condensation brightens to tiny point.

* * * * *

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.
010 Caussols							
C. Pollas, CERGA Caussols, F-06460 Saint Vallier de Thiey, France							
0.9-m Schmidt telescope							
1990 SY3	1990 12	07.74792	00 24 33.99	+17 14 33.0			010
1990 SY3	1990 12	07.79666	00 24 35.86	+17 14 23.1			010
1990 TZ	1990 12	07.74792	00 24 13.90	+16 30 21.6			010
1990 TZ	1990 12	07.79666	00 24 15.67	+16 29 48.6		16	010
033 Tautenburg							
F. Borngen, Karl Schwarzschild Observatorium, O-6901 Tautenburg, Federal Republic of Germany							
L. D. Schmadel, Astronomisches Rechen-Institut, W-6900 Heidelberg, Federal Republic of Germany							
Observers F. Borngen, L. D. Schmadel							
1.3-m Schmidt telescope							
PPM							
1967 GM1	1990 10	11.96021	01 26 50.10	-07 27 44.9			033
1979 SU2	1990 10	12.89285	01 19 44.68	+15 02 36.0			033
1979 SU2	1990 10	13.89493	01 18 53.33	+14 54 27.1			033
1979 SU2	1990 10	14.89493	01 18 01.89	+14 46 13.2			033
1981 EH35	1990 10	12.89285	01 23 12.92	+14 37 40.1			033
1981 EH35	1990 10	13.89493	01 22 14.08	+14 34 05.1			033
1981 EH35	1990 10	14.89493	01 21 14.94	+14 30 25.0			033
1988 CX3	1990 10	12.89285	01 17 10.15	+15 02 04.9			033
1988 CX3	1990 10	13.89493	01 16 16.09	+14 54 52.2			033
1988 CX3	1990 10	14.89493	01 15 21.96	+14 47 33.6			033
1990 TD7	1990 10	14.00674	02 37 08.07	+16 23 15.0		19.0	033
1990 TD7	1990 10	14.05257	02 37 06.09	+16 23 16.8			033
1990 TD7	1990 10	14.99007	02 36 26.92	+16 23 50.6			033
1990 TT7	1990 10	18.10604	02 41 59.10	+14 13 09.1			033
1990 TB9	1990 10	12.89285	01 13 51.62	+14 45 53.6			033
1990 TB9	1990 10	13.89493	01 13 01.02	+14 38 24.6			033
1990 TB9	1990 10	14.89493	01 12 10.32	+14 30 49.1			033
1990 TC9	1990 10	12.89285	01 13 46.22	+12 40 12.0			033
1990 TC9	1990 10	13.89493	01 12 53.17	+12 31 26.2			033
1990 TC9	1990 10	14.89493	01 12 00.25	+12 22 37.6			033
1990 TD9	1990 10	12.89285	01 13 57.94	+14 12 47.8			033
1990 TD9	1990 10	13.89493	01 13 09.05	+14 07 11.5			033
1990 TD9	1990 10	14.89493	01 12 20.43	+14 01 32.9			033
1990 TE9	1990 10	12.89285	01 13 55.79	+15 03 42.1			033
1990 TE9	1990 10	13.89493	01 12 53.37	+14 59 01.9			033
1990 TE9	1990 10	14.89493	01 11 51.14	+14 54 15.2			033
1990 TF9	1990 10	12.89285	01 14 29.76	+14 03 29.9			033
1990 TF9	1990 10	13.89493	01 13 41.89	+13 54 42.3			033
1990 TF9	1990 10	14.89493	01 12 54.20	+13 45 51.6			033
1990 TG9	1990 10	12.89285	01 14 26.29	+14 08 47.6			033
1990 TG9	1990 10	13.89493	01 13 29.21	+14 00 59.5			033
1990 TG9	1990 10	14.89493	01 12 32.24	+13 53 06.3			033
1990 TH9	1990 10	13.89493	01 14 30.49	+13 33 05.8			033
1990 TH9	1990 10	14.89493	01 13 50.33	+13 18 31.8			033
1990 TJ9	1990 10	12.89285	01 14 43.16	+13 40 28.6			033
1990 TJ9	1990 10	13.89493	01 13 48.74	+13 37 15.6			033
1990 TJ9	1990 10	14.89493	01 12 54.35	+13 33 58.8			033
1990 TK9	1990 10	12.89285	01 14 35.61	+14 13 58.8			033
1990 TK9	1990 10	13.89493	01 13 33.90	+14 12 28.7			033
1990 TK9	1990 10	14.89493	01 12 32.34	+14 10 50.6			033
1990 TL9	1990 10	12.89285	01 15 27.74	+13 10 55.6			033

1990 TL9 1990 10 13.89493 01 14 44.00 +13 04 41.1 033
1990 TL9 1990 10 14.89493 01 14 00.38 +12 58 22.7 033
1990 TM9 1990 10 12.89285 01 15 33.51 +13 48 13.1 033
1990 TM9 1990 10 13.89493 01 14 46.61 +13 44 03.6 033
1990 TM9 1990 10 14.89493 01 13 59.60 +13 39 53.1 033
1990 TN9 1990 10 12.89285 01 16 04.92 +12 29 35.9 033
1990 TN9 1990 10 13.89493 01 15 22.09 +12 17 50.7 033
1990 TN9 1990 10 14.89493 01 14 39.17 +12 06 03.3 P 033
1990 TO9 1990 10 12.89285 01 15 50.28 +14 47 25.1 033
1990 TO9 1990 10 13.89493 01 14 54.34 +14 41 29.3 033
1990 TO9 1990 10 14.89493 01 13 58.35 +14 35 25.9 033
1990 TP9 1990 10 12.89285 01 16 06.28 +15 01 27.7 033
1990 TP9 1990 10 13.89493 01 15 14.86 +14 56 18.5 033
1990 TP9 1990 10 14.89493 01 14 23.52 +14 51 03.2 033
1990 TQ9 1990 10 12.89285 01 16 38.78 +14 24 39.3 V 033
1990 TQ9 1990 10 13.89493 01 15 37.67 +14 25 45.4 033
1990 TQ9 1990 10 14.89493 01 14 36.48 +14 26 42.5 033
1990 TR9 1990 10 12.89285 01 16 50.66 +13 30 26.6 033
1990 TR9 1990 10 13.89493 01 15 54.15 +13 26 55.6 033
1990 TR9 1990 10 14.89493 01 14 57.74 +13 23 18.8 033
1990 TS9 1990 10 12.89285 01 17 08.58 +15 14 21.5 033
1990 TS9 1990 10 13.89493 01 16 13.98 +15 10 53.6 033
1990 TS9 1990 10 14.89493 01 15 19.36 +15 07 21.7 033
1990 TU9 1990 10 12.89285 01 17 10.95 +13 47 41.1 033
1990 TU9 1990 10 13.89493 01 16 15.47 +13 47 03.6 033
1990 TU9 1990 10 14.89493 01 15 19.93 +13 46 21.3 033
1990 TV9 1990 10 12.89285 01 17 52.03 +15 10 30.3 033
1990 TV9 1990 10 13.89493 01 17 06.82 +15 02 47.6 033
1990 TV9 1990 10 14.89493 01 16 21.70 +14 54 58.2 033
1990 TW9 1990 10 12.89285 01 17 21.27 +14 23 09.0 033
1990 TW9 1990 10 13.89493 01 16 20.88 +14 17 57.8 033
1990 TW9 1990 10 14.89493 01 15 20.51 +14 12 40.5 033
1990 TX9 1990 10 12.89285 01 18 30.82 +12 57 12.0 033
1990 TX9 1990 10 13.89493 01 17 36.42 +12 52 49.0 033
1990 TX9 1990 10 14.89493 01 16 41.95 +12 48 22.5 033
1990 TY9 1990 10 12.89285 01 18 22.28 +14 50 07.8 033
1990 TY9 1990 10 13.89493 01 17 18.78 +14 46 26.8 033
1990 TY9 1990 10 14.89493 01 16 15.15 +14 42 39.9 033
1990 TZ9 1990 10 12.89285 01 19 01.33 +13 34 01.1 033
1990 TZ9 1990 10 13.89493 01 18 17.47 +13 25 04.2 033
1990 TZ9 1990 10 14.89493 01 17 33.66 +13 16 08.0 V 033
1990 TB10 1990 10 12.89285 01 19 16.66 +13 44 57.9 033
1990 TB10 1990 10 13.89493 01 18 17.54 +13 41 37.9 033
1990 TB10 1990 10 14.89493 01 17 18.35 +13 38 12.0 033
1990 TC10 1990 10 12.89285 01 20 21.26 +15 28 29.1 033
1990 TC10 1990 10 13.89493 01 19 28.44 +15 24 37.8 033
1990 TC10 1990 10 14.89493 01 18 35.72 +15 20 40.4 P 033
1990 TE10 1990 10 12.89285 01 20 41.28 +12 52 44.3 033
1990 TE10 1990 10 13.89493 01 19 40.29 +12 46 00.0 033
1990 TE10 1990 10 14.89493 01 18 39.61 +12 39 13.3 033
1990 TF10 1990 10 12.89285 01 21 20.94 +14 32 04.0 033
1990 TF10 1990 10 13.89493 01 20 39.02 +14 18 43.3 033
1990 TF10 1990 10 14.89493 01 19 57.09 +14 05 23.1 033
1990 TG10 1990 10 12.89285 01 21 43.06 +15 02 08.9 033
1990 TG10 1990 10 13.89493 01 20 53.44 +14 57 35.2 033
1990 TG10 1990 10 14.89493 01 20 03.90 +14 52 59.5 033
1990 TH10 1990 10 12.89285 01 22 20.65 +14 14 50.5 033
1990 TH10 1990 10 13.89493 01 21 35.39 +14 08 42.6 033
1990 TH10 1990 10 14.89493 01 20 50.09 +14 02 34.2 033

1990	TJ10	1990	10	12.89285	01	22	21.09	+14	40	17.3		033
1990	TJ10	1990	10	13.89493	01	21	27.65	+14	37	59.9		033
1990	TJ10	1990	10	14.89493	01	20	34.28	+14	35	39.9		033
1990	TK10	1990	10	12.89285	01	22	37.45	+12	45	56.5		033
1990	TK10	1990	10	13.89493	01	21	50.63	+12	38	26.7		033
1990	TK10	1990	10	14.89493	01	21	03.92	+12	30	52.4		033
1990	TL10	1990	10	12.89285	01	23	27.13	+12	54	54.4		033
1990	TL10	1990	10	13.89493	01	22	46.20	+12	45	17.8		033
1990	TL10	1990	10	14.89493	01	22	05.27	+12	35	39.3		033
1990	TM10	1990	10	12.89285	01	23	01.58	+14	18	26.4		033
1990	TM10	1990	10	13.89493	01	22	05.20	+14	12	35.7	V	033
1990	TM10	1990	10	14.89493	01	21	08.94	+14	06	46.5	V	033
1990	TO10	1990	10	12.89285	01	23	27.19	+12	40	39.9		033
1990	TO10	1990	10	13.89493	01	22	34.08	+12	38	45.9		033
1990	TO10	1990	10	14.89493	01	21	40.93	+12	36	46.7		033
1990	TP10	1990	10	12.89285	01	23	27.89	+13	49	19.7		033
1990	TP10	1990	10	13.89493	01	22	23.43	+13	47	53.9		033
1990	TP10	1990	10	14.89493	01	21	19.05	+13	46	24.6		033
1990	TQ10	1990	10	12.89285	01	23	59.77	+15	19	17.2		033
1990	TQ10	1990	10	13.89493	01	23	09.88	+15	15	21.2		033
1990	TQ10	1990	10	14.89493	01	22	19.93	+15	11	23.7		033
1990	TR10	1990	10	12.89285	01	24	12.58	+15	24	05.3		033
1990	TR10	1990	10	13.89493	01	23	12.28	+15	16	13.5		033
1990	TR10	1990	10	14.89493	01	22	12.02	+15	08	20.8		033
1990	TS10	1990	10	12.89285	01	24	22.63	+12	30	28.8		033
1990	TS10	1990	10	13.89493	01	23	26.12	+12	25	34.9		033
1990	TS10	1990	10	14.89493	01	22	29.60	+12	20	35.4		033
1990	TT10	1990	10	12.89285	01	24	42.82	+12	34	21.5		033
1990	TT10	1990	10	13.89493	01	23	48.33	+12	31	00.2		033
1990	TT10	1990	10	14.89493	01	22	53.92	+12	27	34.7		033
1990	TU10	1990	10	12.89285	01	25	22.57	+15	11	02.0		033
1990	TU10	1990	10	13.89493	01	24	34.78	+15	03	07.6		033
1990	TU10	1990	10	14.89493	01	23	47.05	+14	55	12.4		033
1990	TV10	1990	10	12.89285	01	25	05.38	+13	22	56.6		033
1990	TV10	1990	10	13.89493	01	24	05.58	+13	21	04.9		033
1990	TV10	1990	10	14.89493	01	23	05.39	+13	19	06.4		033
1990	TW10	1990	10	12.89285	01	25	20.38	+15	00	27.7		033
1990	TW10	1990	10	13.89493	01	24	16.26	+14	58	28.7		033
1990	TW10	1990	10	14.89493	01	23	11.88	+14	56	24.3		033
1990	TX10	1990	10	12.89285	01	25	37.77	+13	47	09.0		033
1990	TX10	1990	10	13.89493	01	24	40.59	+13	39	12.3		033
1990	TX10	1990	10	14.89493	01	23	43.46	+13	31	10.5		033
1990	TZ10	1990	10	12.89285	01	26	27.54	+13	09	21.0		033
1990	TA11	1990	10	12.89285	01	25	59.25	+15	08	55.6		033
1990	TA11	1990	10	13.89493	01	24	59.55	+15	00	27.0		033
1990	TA11	1990	10	14.89493	01	24	00.00	+14	51	56.9		033
1990	TC11	1990	10	12.89285	01	13	03.50	+12	31	09.4	E	033
1990	TE11	1990	10	13.85049	00	29	09.50	+08	26	52.1		033
1990	TB13	1990	10	11.96021	01	19	57.54	-07	24	09.2		033
1990	TB13	1990	10	14.96646	01	17	42.11	-07	40	58.9		033
1990	TC13	1990	10	11.96021	01	20	11.15	-08	36	35.1		033
1990	TC13	1990	10	14.96646	01	17	42.40	-08	41	58.6		033
1990	TD13	1990	10	11.96021	01	22	22.53	-07	58	21.2		033
1990	TD13	1990	10	14.96646	01	20	02.73	-08	07	11.6		033
1990	TE13	1990	10	11.96021	01	25	24.68	-07	08	54.2		033
1990	TE13	1990	10	14.96646	01	22	50.43	-07	13	49.8		033
1990	TF13	1990	10	11.96021	01	26	09.35	-06	05	31.9		033
1990	TF13	1990	10	14.96646	01	23	35.11	-06	16	53.0		033
1990	TG13	1990	10	11.96021	01	26	45.81	-07	38	58.2		033

1990	TG13	1990	10	14.96646	01	23	33.94	-07	43	56.2	033
1990	TH13	1990	10	11.96021	01	28	36.54	-07	15	51.6	033
1990	TH13	1990	10	14.96646	01	26	08.55	-07	24	30.9	033
1990	TJ13	1990	10	11.96021	01	29	47.05	-08	17	45.2	033
1990	TJ13	1990	10	14.96646	01	27	25.15	-08	35	05.9	033
1990	TK13	1990	10	11.96021	01	29	49.82	-08	29	47.4	033
1990	TK13	1990	10	14.96646	01	27	27.20	-08	40	51.7	033
1990	TL13	1990	10	11.96021	01	32	02.20	-07	50	35.2	033
1990	TL13	1990	10	14.96646	01	29	08.79	-08	07	37.0	033
1990	TM13	1990	10	14.96646	01	29	34.88	-08	23	32.7	033
1990	TN13*	1990	10	14.00674	02	25	42.56	+16	09	42.6	18.8 033
1990	TN13	1990	10	14.05257	02	25	40.63	+16	09	33.8	033
1990	TN13	1990	10	14.99007	02	25	02.94	+16	06	37.3	033
1990	TO13*	1990	10	14.00674	02	26	05.47	+15	25	45.9	18.5 033
1990	TO13	1990	10	14.05257	02	26	02.88	+15	25	40.4	033
1990	TO13	1990	10	14.99007	02	25	11.60	+15	23	58.8	033
1990	TP13*	1990	10	14.00674	02	27	01.85	+13	55	54.2	19.1 033
1990	TP13	1990	10	14.05257	02	26	59.67	+13	55	46.6	033
1990	TP13	1990	10	14.99007	02	26	17.17	+13	53	25.4	033
1990	TQ13*	1990	10	14.00674	02	27	03.70	+15	06	37.0	19.2 033
1990	TQ13	1990	10	14.05257	02	27	01.44	+15	06	34.2	033
1990	TQ13	1990	10	14.99007	02	26	15.83	+15	05	57.3	033
1990	TR13*	1990	10	14.00674	02	27	08.48	+16	03	57.4	19.3 033
1990	TR13	1990	10	14.05257	02	27	06.32	+16	03	47.6	033
1990	TR13	1990	10	14.99007	02	26	24.78	+16	00	29.3	033
1990	TS13*	1990	10	14.00674	02	28	03.79	+16	27	21.0	19.2 033
1990	TS13	1990	10	14.05257	02	28	01.61	+16	27	04.1	033
1990	TS13	1990	10	14.99007	02	27	20.40	+16	21	10.3	033
1990	TT13*	1990	10	14.00674	02	29	58.39	+15	41	55.4	19.4 033
1990	TT13	1990	10	14.05257	02	29	56.12	+15	41	54.0	033
1990	TT13	1990	10	14.99007	02	29	10.85	+15	41	39.0	033
1990	TU13*	1990	10	14.00674	02	29	58.74	+15	33	24.0	19.7 033
1990	TU13	1990	10	14.05257	02	29	56.31	+15	33	13.8	033
1990	TU13	1990	10	14.99007	02	29	08.44	+15	30	06.5	033
1990	TV13*	1990	10	14.00674	02	30	24.17	+16	06	22.2	17.1 033
1990	TV13	1990	10	14.05257	02	30	21.40	+16	06	26.9	033
1990	TV13	1990	10	14.99007	02	29	27.44	+16	08	08.1	033
1990	TW13*	1990	10	14.00674	02	30	38.69	+15	30	49.3	19.3 033
1990	TW13	1990	10	14.05257	02	30	36.56	+15	30	38.4	033
1990	TW13	1990	10	14.99007	02	29	55.15	+15	27	05.5	033
1990	TX13*	1990	10	14.00674	02	30	43.58	+16	14	48.6	20.0 033
1990	TX13	1990	10	14.05257	02	30	41.25	+16	14	33.4	033
1990	TX13	1990	10	14.99007	02	29	52.57	+16	11	44.4	033
1990	TY13*	1990	10	14.00674	02	30	56.50	+15	46	16.4	17.7 033
1990	TY13	1990	10	14.05257	02	30	54.83	+15	46	05.1	033
1990	TY13	1990	10	14.99007	02	30	21.81	+15	42	19.6	033
1990	TZ13*	1990	10	14.00674	02	31	14.50	+14	11	17.6	18.9 033
1990	TZ13	1990	10	14.05257	02	31	12.49	+14	11	07.1	033
1990	TZ13	1990	10	14.99007	02	30	33.15	+14	07	32.8	033
1990	TA14*	1990	10	14.00674	02	31	23.36	+13	56	07.1	19.0 033
1990	TA14	1990	10	14.05257	02	31	21.12	+13	56	04.7	033
1990	TA14	1990	10	14.99007	02	30	38.72	+13	55	09.5	033
1990	TB14*	1990	10	14.00674	02	31	35.75	+15	44	49.9	18.7 033
1990	TB14	1990	10	14.05257	02	31	33.12	+15	44	51.3	033
1990	TB14	1990	10	14.99007	02	30	42.77	+15	45	25.5	033
1990	TC14*	1990	10	14.00674	02	32	33.74	+14	33	58.1	19.6 033
1990	TC14	1990	10	14.05257	02	32	31.33	+14	33	54.1	033
1990	TC14	1990	10	14.99007	02	31	43.42	+14	32	33.7	033
1990	TD14*	1990	10	14.00674	02	32	50.07	+14	06	05.3	19.4 033

1990	TD14	1990	10	14.05257	02	32	47.46	+14	06	02.5	033
1990	TD14	1990	10	14.99007	02	31	57.02	+14	05	09.2	033
1990	TE14*	1990	10	14.00674	02	33	08.53	+15	10	41.8	18.3 033
1990	TE14	1990	10	14.05257	02	33	06.62	+15	10	32.8	033
1990	TE14	1990	10	14.99007	02	32	29.50	+15	07	36.8	033
1990	TF14*	1990	10	14.00674	02	33	30.15	+14	53	57.1	18.6 033
1990	TF14	1990	10	14.05257	02	33	27.59	+14	53	52.3	033
1990	TF14	1990	10	14.99007	02	32	38.49	+14	52	13.9	033
1990	TG14*	1990	10	14.00674	02	35	33.71	+15	31	06.7	19.5 033
1990	TG14	1990	10	14.05257	02	35	31.63	+15	30	58.5	033
1990	TG14	1990	10	14.99007	02	34	50.39	+15	28	19.4	033
1990	TH14*	1990	10	14.00674	02	36	04.45	+15	23	29.5	18.6 033
1990	TH14	1990	10	14.05257	02	36	02.54	+15	23	21.4	033
1990	TH14	1990	10	14.99007	02	35	24.01	+15	20	39.2	033
1990	TJ14*	1990	10	14.00674	02	36	19.29	+13	26	12.8	19.4 033
1990	TJ14	1990	10	14.05257	02	36	17.34	+13	25	53.3	033
1990	TJ14	1990	10	14.99007	02	35	40.26	+13	18	10.7	033
1990	TK14*	1990	10	14.00674	02	37	36.70	+14	08	43.1	19.2 033
1990	TK14	1990	10	14.05257	02	37	34.79	+14	08	34.7	033
1990	TK14	1990	10	14.99007	02	36	57.66	+14	05	18.6	033
1990	TL14*	1990	10	14.00674	02	37	51.78	+13	50	18.4	19.3 033
1990	TL14	1990	10	14.05257	02	37	49.68	+13	50	10.9	033
1990	TL14	1990	10	14.99007	02	37	09.67	+13	47	14.3	033
1990	TM14*	1990	10	14.00674	02	38	28.27	+14	10	27.5	19.1 033
1990	TM14	1990	10	14.05257	02	38	26.15	+14	10	14.3	033
1990	TM14	1990	10	14.99007	02	37	45.35	+14	05	23.1	033
1990	TN14*	1990	10	14.05257	02	32	32.10	+14	42	04.6	18.8 033
1990	TN14	1990	10	14.99007	02	31	50.76	+14	40	00.0	033
1990	UC1	1990	10	12.89285	01	16	20.28	+12	30	58.8	033
1990	UC1	1990	10	13.89493	01	15	09.75	+12	30	43.1	033
1990	UC1	1990	10	14.89493	01	13	59.57	+12	30	22.1	033
1990	WC	1990	10	11.96021	01	20	36.63	-08	14	12.7	033
2164	P-L	1990	10	12.89285	01	19	04.96	+12	57	23.6	033
2164	P-L	1990	10	13.89493	01	18	09.71	+12	51	50.8	033
2164	P-L	1990	10	14.89493	01	17	14.60	+12	46	14.5	033
4611	P-L	1990	10	12.89285	01	20	19.81	+13	36	00.4	033
4611	P-L	1990	10	13.89493	01	19	11.83	+13	35	05.9	033
4611	P-L	1990	10	14.89493	01	18	03.74	+13	34	07.4	033
341		1990	10	14.00674	02	36	16.59	+15	43	20.9	14.5 033
341		1990	10	14.05257	02	36	13.70	+15	43	20.0	033
341		1990	10	14.99007	02	35	15.94	+15	43	01.7	033
2203		1990	10	14.00674	02	29	16.79	+13	52	12.5	16.7 033
2203		1990	10	14.05257	02	29	14.78	+13	52	04.4	033
2203		1990	10	14.99007	02	28	35.36	+13	49	26.3	033
2635		1990	10	12.89285	01	13	38.80	+15	14	22.2	033
2635		1990	10	13.89493	01	12	38.22	+15	07	59.3	033
2635		1990	10	14.89493	01	11	36.95	+15	01	29.3	033
2823		1990	10	12.89285	01	20	07.88	+13	57	17.7	033
2823		1990	10	13.89493	01	19	14.02	+13	50	25.5	033
2823		1990	10	14.89493	01	18	20.14	+13	43	29.8	033
3555		1990	10	14.00674	02	28	18.15	+16	10	22.2	16.5 033
3555		1990	10	14.05257	02	28	15.47	+16	10	24.4	033
3555		1990	10	14.99007	02	27	22.26	+16	11	24.2	033

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0.6-m Maksutov reflector

1939	UB	1990	11	10.91837	02	53	14.41	+11	26	25.8	16.5 046
1939	UB	1990	11	10.93243	02	53	13.78	+11	26	17.3	046
1939	UB	1990	11	13.86765	02	50	41.40	+10	59	28.6	046
1939	UB	1990	11	13.88177	02	50	40.63	+10	59	20.1	046
1939	UB	1990	11	13.90515	02	50	39.55	+10	59	10.5	046
1939	UB	1990	11	13.91944	02	50	38.87	+10	59	04.8	046
1982	UM2	1990	11	10.87167	02	20	27.90	+10	07	08.6	046
1982	UM2	1990	11	10.88590	02	20	27.24	+10	07	04.8	046
1983	TU	1990	12	06.78056	03	54	20.94	+24	54	02.8	046
1983	TU	1990	12	06.79329	03	54	20.29	+24	54	00.2	046
1983	TU	1990	12	07.77183	03	53	15.49	+24	53	11.9	046
1983	TU	1990	12	07.78468	03	53	14.69	+24	53	12.0	046
1984	BK	1990	12	08.84631	04	54	09.85	+28	20	11.2	046
1984	BK	1990	12	08.85916	04	54	09.07	+28	20	08.3	046
1984	BK	1990	12	11.85315	04	50	43.80	+28	09	01.7	046
1984	BK	1990	12	11.86600	04	50	43.10	+28	08	59.9	046
1985	HG1	1990	11	10.91837	03	00	26.75	+11	56	43.8	046
1985	HG1	1990	11	10.93243	03	00	25.98	+11	56	41.2	046
1985	HG1	1990	11	13.90515	02	57	14.92	+11	45	31.1	046
1985	HG1	1990	11	13.91944	02	57	14.22	+11	45	29.4	046
1985	QN	1990	11	10.91837	02	53	52.17	+12	42	57.3	046
1985	QN	1990	11	10.93243	02	53	51.57	+12	42	55.8	046
1985	QN	1990	11	13.86765	02	51	12.92	+12	32	27.4	046
1985	QN	1990	11	13.88177	02	51	12.32	+12	32	23.2	046
1985	QN	1990	11	13.90515	02	51	11.53	+12	32	21.4	046
1985	QN	1990	11	13.91944	02	51	10.98	+12	32	17.0	046
1986	RO1	1990	12	06.81221	04	09	10.97	+23	28	38.4	046
1986	RO1	1990	12	06.82506	04	09	10.31	+23	28	40.0	046
1986	RO1	1990	12	07.80169	04	08	04.40	+23	24	47.9	046
1986	RO1	1990	12	07.81454	04	08	03.51	+23	24	47.8	046
1986	XH	1990	11	10.80292	01	57	04.20	+26	58	27.9	046
1986	XH	1990	11	10.81698	01	57	03.40	+26	58	20.2	046
1989	TS1	1990	11	10.80292	02	00	49.37	+28	07	26.4	046
1989	TS1	1990	11	10.81698	02	00	48.84	+28	07	25.7	046
1989	TS1	1990	11	13.78793	01	59	03.74	+28	01	25.6	046
1989	TS1	1990	11	13.80214	01	59	03.16	+28	01	24.8	046
1990	SQ	1990	12	06.71647	22	09	54.27	+36	58	07.4	046
1990	SQ	1990	12	06.72503	22	09	55.58	+36	58	28.2	046
1990	SQ	1990	12	07.71575	22	12	30.92	+37	39	01.5	046
1990	SQ	1990	12	07.72287	22	12	31.96	+37	39	17.0	046
1990	SQ	1990	12	08.71367	22	15	12.23	+38	19	32.5	046
1990	SQ	1990	12	08.72096	22	15	13.36	+38	19	50.2	046
1990	SQ	1990	12	11.74100	22	23	52.52	+40	20	28.8	046
1990	SQ	1990	12	11.75025	22	23	54.16	+40	20	51.0	046
1990	TR	1990	11	10.80292	01	57	25.48	+26	35	43.2	046
1990	TR	1990	11	10.81698	01	57	25.04	+26	35	47.2	046
1990	TR	1990	11	13.78793	01	56	24.16	+26	48	54.9	046
1990	TR	1990	11	13.80214	01	56	23.83	+26	48	58.8	046
1990	TF8	1990	11	10.87167	02	25	07.55	+11	56	40.0	16.8 046
1990	TF8	1990	11	10.88590	02	25	06.83	+11	56	34.0	046
1990	UJ1	1990	11	10.83642	01	35	54.99	+14	10	10.6	16.8 046
1990	UJ1	1990	11	10.85066	01	35	54.13	+14	10	00.3	046
1990	UH4	1990	11	10.91837	02	55	52.33	+10	46	34.7	16.8 046
1990	UH4	1990	11	10.93243	02	55	51.64	+10	46	42.2	046
1990	UH4	1990	11	13.86765	02	52	30.82	+11	04	15.4	046
1990	UH4	1990	11	13.88177	02	52	30.36	+11	04	20.6	046
1990	UH4	1990	11	13.90515	02	52	28.72	+11	04	30.7	046
1990	VQ1	1990	10	24.89416	01	49	19.58	+15	24	31.0	16.5 046
1990	VQ1	1990	10	24.90833	01	49	18.93	+15	24	24.7	046

1990	VQ1		1990	10	24.92905	01	49	17.57	+15	24	11.9		046
1990	VQ1		1990	10	24.94317	01	49	17.01	+15	24	05.3		046
1990	VD7	*	1990	11	10.83642	01	38	56.54	+15	08	03.2	16.6	046
1990	VD7		1990	11	10.85066	01	38	55.79	+15	07	58.9		046
1990	VD7		1990	11	13.82587	01	36	30.15	+14	54	43.3		046
1990	VD7		1990	11	13.84311	01	36	29.31	+14	54	36.8		046
1990	VE7	*	1990	11	10.83642	01	40	21.22	+17	57	10.4	16.6	046
1990	VE7		1990	11	10.85066	01	40	20.36	+17	57	06.9		046
1990	VE7		1990	11	13.82587	01	38	17.55	+17	45	23.0		046
1990	VE7		1990	11	13.84311	01	38	16.87	+17	45	19.0		046
1990	VF7	*	1990	11	10.83642	01	40	26.94	+15	37	04.9	16.5	046
1990	VF7		1990	11	10.85066	01	40	26.21	+15	37	02.1		046
1990	VF7		1990	11	13.82587	01	38	14.23	+15	26	07.9		046
1990	VF7		1990	11	13.84311	01	38	13.55	+15	26	05.8		046
1990	VG7	*	1990	11	10.91837	02	55	06.38	+12	26	14.1	16.7	046
1990	VG7		1990	11	10.93243	02	55	05.48	+12	26	07.9		046
1990	VG7		1990	11	13.86765	02	52	25.18	+12	09	13.7		046
1990	VG7		1990	11	13.88177	02	52	24.53	+12	09	09.0		046
406			1990	11	10.83642	01	35	55.21	+17	12	10.7		046
406			1990	11	10.85066	01	35	54.61	+17	12	05.6		046
406			1990	11	13.82587	01	34	03.18	+16	58	15.7		046
406			1990	11	13.84311	01	34	02.51	+16	58	11.1		046
672			1990	11	10.80292	01	53	37.29	+27	35	50.4		046
672			1990	11	10.81698	01	53	36.44	+27	35	47.2		046
672			1990	11	13.78793	01	50	49.38	+27	21	56.8		046
672			1990	11	13.80214	01	50	48.62	+27	21	54.0		046
695			1990	12	11.85315	04	48	54.02	+30	15	39.8		046
695			1990	12	11.86600	04	48	53.16	+30	16	07.0		046
854			1990	11	10.87167	02	18	24.66	+08	40	48.0		046
854			1990	11	10.88590	02	18	23.81	+08	40	42.0		046
959			1990	12	06.81221	04	13	50.19	+22	23	33.9		046
959			1990	12	06.82506	04	13	49.52	+22	23	33.6		046
959			1990	12	07.80169	04	12	58.29	+22	23	02.9		046
959			1990	12	07.81454	04	12	57.45	+22	23	02.0		046
1099			1990	11	10.83642	01	40	36.86	+15	23	22.3		046
1099			1990	11	10.85066	01	40	36.26	+15	23	22.8		046
1099			1990	11	13.82587	01	38	24.09	+15	26	06.3		046
1099			1990	11	13.84311	01	38	23.40	+15	26	06.3		046
1226			1990	11	10.83642	01	40	01.62	+15	38	46.9		046
1226			1990	11	10.85066	01	40	00.84	+15	38	44.5		046
1226			1990	11	13.82587	01	37	25.51	+15	31	59.8		046
1226			1990	11	13.84311	01	37	24.47	+15	31	56.4		046
1535			1990	12	08.84631	04	50	13.49	+24	11	26.5		046
1535			1990	12	08.85916	04	50	12.59	+24	11	23.1		046
1594			1990	11	10.91837	03	06	43.06	+11	40	04.1		046
1594			1990	11	10.93243	03	06	42.06	+11	40	03.2		046
1594			1990	11	13.90515	03	03	13.61	+11	38	04.5		046
1594			1990	11	13.91944	03	03	12.65	+11	38	03.5		046
1619			1990	11	10.87167	02	19	24.98	+09	21	31.3		046
1619			1990	11	10.88590	02	19	24.11	+09	21	33.6		046
1663			1990	11	13.86765	02	46	09.37	+09	15	57.3		046
1663			1990	11	13.88177	02	46	08.51	+09	15	57.6		046
1684			1990	11	10.91837	03	00	11.51	+12	29	15.5		046
1684			1990	11	10.93243	03	00	10.77	+12	29	13.5		046
1684			1990	11	13.90515	02	57	47.92	+12	20	34.6		046
1684			1990	11	13.91944	02	57	47.14	+12	20	32.7		046
1810			1990	11	10.83642	01	35	33.41	+14	43	29.9		046
1810			1990	11	10.85066	01	35	32.73	+14	43	24.0		046
1810			1990	11	13.82587	01	33	20.72	+14	21	22.1		046

1810	1990	11	13.84311	01	33	19.91	+14	21	14.0	046
2027	1990	11	10.87167	02	19	10.68	+09	08	26.7	046
2027	1990	11	10.88590	02	19	09.88	+09	08	26.2	046
2665	1990	11	10.83642	01	37	13.42	+17	23	56.2	046
2665	1990	11	10.85066	01	37	12.96	+17	23	52.1	046
2665	1990	11	13.82587	01	34	48.64	+17	02	47.9	046
2665	1990	11	13.84311	01	34	47.82	+17	02	42.3	046
2675	1990	12	07.80169	04	07	08.30	+25	38	03.8	E 046
2675	1990	12	07.81454	04	07	07.57	+25	38	02.9	046
2697	1990	12	06.81221	04	15	35.84	+23	23	48.0	046
2697	1990	12	06.82506	04	15	35.29	+23	23	46.8	046
2697	1990	12	07.80169	04	14	49.72	+23	20	57.2	046
2697	1990	12	07.81454	04	14	49.98	+23	20	53.2	046
2955	1990	12	06.78056	03	56	16.31	+23	54	37.8	046
2955	1990	12	06.79329	03	56	15.47	+23	54	36.3	046
2955	1990	12	07.77183	03	55	09.06	+23	52	14.0	046
2955	1990	12	07.78468	03	55	08.31	+23	52	12.3	046
2991	1990	11	13.86765	02	43	33.42	+08	45	51.5	046
2991	1990	11	13.88177	02	43	32.44	+08	45	49.7	046
3013	1990	11	10.83642	01	40	41.44	+13	58	58.2	046
3013	1990	11	10.85066	01	40	40.61	+13	58	56.0	046
3013	1990	11	13.82587	01	38	09.81	+13	48	37.4	046
3013	1990	11	13.84311	01	38	08.89	+13	48	33.7	046
3126	1990	11	13.86765	02	46	16.56	+10	48	43.8	046
3126	1990	11	13.88177	02	46	15.79	+10	48	35.9	046
3395	1990	12	06.78056	03	49	04.88	+25	42	00.0	046
3395	1990	12	06.79329	03	49	04.20	+25	41	56.7	046
3395	1990	12	07.77183	03	48	10.54	+25	39	25.6	046
3395	1990	12	07.78468	03	48	09.69	+25	39	24.4	046
3583	1990	12	08.84631	04	47	16.12	+26	04	56.3	046
3583	1990	12	08.85916	04	47	15.29	+26	04	55.5	046
3632	1990	11	10.91837	03	03	50.02	+11	22	32.7	046
3632	1990	11	10.93243	03	03	49.40	+11	22	26.5	046
3810	1990	11	10.83642	01	36	58.49	+15	42	32.0	046
3810	1990	11	10.85066	01	36	57.85	+15	42	24.0	046
4472	1990	11	10.83642	01	34	15.29	+16	44	00.4	046
4472	1990	11	10.85066	01	34	14.62	+16	43	58.4	046
4472	1990	11	13.82587	01	31	54.01	+16	38	21.8	046
4472	1990	11	13.84311	01	31	53.25	+16	38	20.3	046
4671	1990	11	10.83642	01	35	11.24	+16	20	03.2	046
4671	1990	11	10.85066	01	35	10.53	+16	19	58.6	046
4671	1990	11	13.82587	01	32	52.18	+16	07	43.8	046
4671	1990	11	13.84311	01	32	51.35	+16	07	39.7	046

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Sloneczna 36, PL-60286 Poznan, Poland
Observers S. Breiter, M. Gromadzinski, W. Naskrecki, R. Ochnik, G. Rewers
Measurers J. Kosicka, A. Kryszczynska, R. Ochnik, S. Breiter, H. Kuzminski
0.3-m f/5 astrograph
SAOC

2	1987	04	17.01061	16	20	09.64	+20	32	03.0	047
2	1987	04	25.04019	16	16	05.52	+22	21	04.8	047
2	1987	04	29.04335	16	13	33.94	+23	10	02.3	047
2	1987	04	30.00863	16	12	54.88	+23	21	12.2	047
2	1987	05	20.95887	15	56	08.47	+26	11	14.1	047
2	1987	05	24.86625	15	52	49.14	+26	26	04.7	047
2	1987	05	25.98088	15	51	52.63	+26	29	18.4	047
2	1987	05	26.98991	15	51	02.01	+26	31	50.1	047

2		1987	06	02.97917	15	45	24.67	+26 39 29.5	047
2		1987	06	05.98820	15	43	09.30	+26 37 38.8	047
2		1987	06	17.87881	15	35	35.99	+26 03 09.9	047
2		1988	08	16.91124	20	02	34.79	+13 50 14.1	047
2		1988	10	03.79175	19	52	14.39	+04 28 53.5	047
2		1988	10	04.78711	19	52	30.21	+04 18 12.8	047
4		1987	10	31.17046	08	26	06.38	+18 55 26.3	047
4		1988	01	12.01844	08	26	24.22	+22 19 42.0	047
4		1988	01	13.06877	08	25	22.16	+22 26 38.0	047
4		1988	01	15.01242	08	23	25.04	+22 39 31.6	047
4		1988	03	12.94775	07	42	35.96	+26 19 43.2	047
4		1988	03	17.84459	07	43	23.48	+26 19 44.4	047
4		1988	04	06.89685	07	53	58.95	+25 55 57.1	047
10		1988	01	12.10214	10	45	06.92	+04 11 04.7	047
10		1988	01	13.13285	10	44	56.26	+04 10 18.7	047
10		1988	05	09.87517	10	01	45.90	+07 48 37.1	047
11		1988	05	09.99514	13	00	40.56	+01 11 12.0	047
11		1988	05	12.92784	12	59	10.80	+01 15 33.8	047
13		1988	01	11.97931	06	38	23.30	+47 12 25.6	047
13		1988	01	12.95873	06	37	06.91	+47 14 24.0	047
13		1988	01	13.99772	06	35	47.03	+47 16 11.4	047
13		1988	01	14.88997	06	34	40.03	+47 17 25.6	047
13		1988	03	12.84564	06	27	10.48	+43 11 00.4	047
13		1988	03	12.94083	06	27	15.90	+43 10 21.0	047
13		1988	04	06.86942	06	59	16.02	+40 22 32.8	047
14		1988	01	12.10663	12	06	00.64	+11 47 11.1	047
14		1988	01	13.13705	12	06	48.76	+11 49 07.8	047
14		1988	04	15.93500	11	36	32.72	+19 01 49.5	047
14		1988	05	09.93970	11	35	24.20	+16 31 43.0	047
16		1987	03	02.97256	10	46	25.85	+08 39 39.0	047
16		1987	03	21.04185	10	33	13.16	+10 11 04.7	047
16		1987	03	21.85348	10	32	42.29	+10 14 35.4	047
16		1987	03	26.96495	10	29	40.61	+10 35 09.6	047
16		1987	04	16.82685	10	22	16.12	+11 26 49.5	047
16		1987	04	17.81754	10	22	08.09	+11 27 55.6	047
16		1987	04	22.87774	10	21	45.53	+11 31 32.9	047
16		1987	04	24.87699	10	21	45.26	+11 32 07.8	047
16		1987	04	25.86074	10	31	10.92	+10 43 31.5	047
16		1987	04	26.86908	10	31	45.01	+10 40 17.5	047
16		1987	04	30.85898	10	22	13.37	+11 30 54.8	047
16		1987	05	01.88532	10	22	22.30	+11 30 17.0	047
17		1988	05	09.98715	12	16	26.77	+07 19 08.5	047
17		1988	05	12.91985	12	16	02.67	+07 14 52.2	047
18		1987	02	27.07744	14	18	50.71	-03 35 57.2	047
18		1987	03	22.02710	14	12	52.03	-01 04 11.5	047
18		1987	04	16.95273	13	52	52.58	+02 21 03.2	047
18		1987	04	22.96171	13	47	22.00	+03 02 25.9	047
18		1987	04	24.96796	13	45	32.19	+03 15 06.3	047
18		1987	04	28.04832	13	42	45.93	+03 33 18.8	047
18		1987	04	28.97355	13	41	56.68	+03 38 27.0	047
18		1987	04	29.94647	13	41	05.22	+03 43 43.4	047
18		1987	04	30.92403	13	40	14.70	+03 48 46.5	047
18		1987	05	01.97141	13	39	20.66	+03 54 02.2	047
18		1987	05	20.95174	13	25	58.95	+04 50 29.1	047
18		1987	05	24.86093	13	24	06.33	+04 52 52.0	047
18		1987	05	25.95241	13	23	38.58	+04 52 58.6	047
18		1987	05	26.95693	13	23	14.51	+04 52 50.3	047
18		1987	06	02.92674	13	21	06.94	+04 46 41.3	047
18		1987	06	05.92362	13	20	33.45	+04 41 17.1	047

18	1988	08	09.04703	23	02	23.50	-06	04	10.6	047
19	1988	05	10.89586	11	57	23.19	-00	20	24.2	047
19	1988	05	12.89381	11	57	05.63	-00	17	14.9	047
22	1988	05	09.95972	11	32	59.16	+19	23	38.0	047
26	1987	03	21.05211	12	48	45.08	-01	14	27.9	047
26	1987	04	16.93793	12	25	55.29	+00	32	57.3	047
26	1987	04	22.89088	12	21	41.30	+00	48	07.3	047
26	1987	04	24.93740	12	20	23.31	+00	52	11.2	047
26	1987	04	27.97708	12	18	37.66	+00	56	59.8	047
26	1987	04	28.95897	12	18	06.22	+00	58	15.3	047
26	1987	04	29.87159	12	17	38.50	+00	59	15.6	047
26	1987	04	30.87571	12	17	09.13	+01	00	12.3	047
26	1987	05	01.95270	12	16	39.20	+01	01	02.5	047
28	1988	01	13.07988	09	27	56.09	+10	47	34.1	047
28	1988	03	17.87330	08	49	41.17	+18	39	44.6	047
28	1988	03	18.88720	08	49	41.09	+18	43	50.0	047
29	1988	01	12.00696	07	43	25.97	+30	40	44.4	047
29	1988	01	13.01429	07	42	17.14	+30	42	08.4	047
29	1988	01	14.96155	07	40	04.05	+30	44	27.8	047
29	1988	03	12.86409	07	12	03.55	+28	25	16.0	047
29	1988	04	06.87897	07	30	15.50	+26	28	36.6	047
45	1987	04	17.00534	15	38	11.87	-09	00	26.1	047
45	1987	04	23.00477	15	34	50.21	-08	30	33.2	047
45	1987	04	25.02977	15	33	31.64	-08	20	29.0	047
45	1987	04	28.02986	15	31	27.32	-08	05	45.6	047
45	1987	04	30.00272	15	30	00.53	-07	56	11.5	047
45	1987	05	20.95531	15	12	52.27	-06	34	26.6	047
45	1987	05	24.87186	15	09	46.07	-06	25	05.2	047
45	1987	05	25.92185	15	08	57.75	-06	22	56.6	047
45	1987	06	02.91840	15	03	22.80	-06	12	49.6	047
45	1987	06	05.90903	15	01	35.37	-06	11	50.8	047
45	1988	08	09.05744	23	34	05.46	-05	02	22.4	047
45	1988	08	14.06032	23	31	52.30	-05	30	45.9	047
45	1988	08	15.03521	23	31	22.91	-05	36	40.2	047
64	1988	01	15.02064	08	31	04.04	+19	16	11.9	047
64	1988	03	17.85435	07	56	49.90	+20	25	20.4	047
64	1988	03	18.87678	07	57	09.32	+20	23	59.5	047
64	1988	04	06.90657	08	08	29.99	+19	43	43.4	047
65	1988	05	09.92813	12	14	44.81	+01	40	32.5	047
65	1988	05	12.90283	12	14	08.22	+01	44	11.8	047
72	1988	08	08.90997	21	19	06.38	-04	53	38.3	047
72	1988	08	13.90179	21	14	43.80	-05	22	39.5	047
72	1988	08	14.93727	21	13	49.87	-05	29	06.6	047
80	1988	01	13.05785	08	10	19.38	+05	42	41.8	047
80	1988	03	12.92277	07	31	57.14	+10	01	16.7	047
88	1988	01	13.91988	05	17	59.83	+23	52	34.0	047
88	1988	01	14.81172	05	17	26.40	+23	50	41.0	047
97	1988	08	09.04189	23	01	01.95	-04	13	24.8	047
97	1988	08	14.04740	22	58	33.02	-04	52	22.1	047
113	1988	03	17.88730	09	14	08.67	+20	09	41.4	047
113	1988	03	18.89955	09	13	50.68	+20	12	00.7	047
145	1988	04	22.97778	13	22	48.54	+09	19	56.9	047
150	1988	08	14.00602	22	52	36.35	-04	14	10.6	047
150	1988	08	15.00840	22	52	00.12	-04	18	00.5	047
192	1987	02	27.00279	10	56	39.61	+07	10	50.8	047
192	1987	03	02.97594	10	52	39.25	+07	27	01.0	047
192	1987	03	21.02223	10	35	32.75	+08	32	35.4	047
196	1988	01	12.01164	07	49	51.71	+28	03	03.3	047
196	1988	01	13.01821	07	48	57.19	+28	06	53.1	047

196	1988	03	12.95500	07	17	25.74	+29	10	03.1	047
196	1988	04	06.88921	07	27	49.12	+28	23	49.5	047
218	1988	04	23.02818	15	46	52.90	+01	28	06.3	047
218	1988	05	12.99589	15	33	11.79	+04	24	59.5	047
233	1988	08	08.91553	21	20	01.29	-01	54	36.6	047
233	1988	08	13.92539	21	15	52.69	-02	15	49.7	047
233	1988	08	14.94155	21	15	02.84	-02	20	37.4	047
238	1988	08	08.94703	21	44	54.61	-00	23	05.4	047
246	1988	08	08.96566	22	09	06.66	-03	51	00.5	047
246	1988	08	14.96512	22	04	51.68	-04	51	02.7	047
253	1988	08	08.95866	21	58	23.13	-03	45	30.5	047
253	1988	08	14.95701	21	54	51.19	-04	28	34.8	047
253	1988	08	17.05069	21	53	32.41	-04	45	09.1	047
322	1988	08	08.95273	21	48	10.58	+01	18	05.8	047
322	1988	08	09.07651	21	48	04.72	+01	18	03.1	047
322	1988	08	13.91424	21	44	16.87	+01	14	25.8	047
322	1988	08	14.01123	21	44	11.94	+01	14	17.8	047
322	1988	08	14.95214	21	43	26.27	+01	13	00.0	047
324	1988	01	11.97292	05	54	20.30	+37	48	52.7	047
324	1988	01	12.95432	05	53	27.10	+37	41	36.6	047
324	1988	01	13.93403	05	52	35.61	+37	34	16.0	047
324	1988	01	14.87289	05	51	48.83	+37	27	08.7	047
324	1988	03	12.83522	06	03	20.71	+30	46	46.8	047
324	1988	03	12.93444	06	03	26.43	+30	46	15.1	047
324	1988	03	18.86557	06	09	31.84	+30	15	19.9	047
346	1988	04	22.96516	12	55	55.82	+07	15	28.0	047
354	1987	02	25.14584	12	20	33.10	+14	05	00.7	047
354	1987	03	02.98004	12	17	48.88	+15	23	01.8	047
354	1987	03	21.06390	12	06	02.62	+19	07	00.7	047
354	1987	03	21.88404	12	05	27.47	+19	15	48.2	047
354	1987	04	14.92112	11	50	20.94	+22	06	52.6	047
354	1987	04	16.83225	11	49	31.81	+22	12	44.9	047
354	1987	04	17.82194	11	49	08.12	+22	15	21.2	047
354	1987	04	22.90338	11	47	26.77	+22	24	07.2	047
354	1987	04	24.95407	11	46	56.00	+22	25	33.0	047
354	1987	04	27.90167	11	46	22.42	+22	25	30.8	047
354	1987	04	27.96215	11	46	21.76	+22	25	29.5	047
354	1987	04	28.89052	11	46	13.96	+22	24	59.3	047
354	1987	04	28.96667	11	46	13.29	+22	24	55.7	047
354	1987	04	29.86487	11	46	07.06	+22	24	12.6	047
354	1987	05	24.84990	11	50	51.82	+20	52	45.8	047
354	1987	05	25.93921	11	51	22.98	+20	46	11.6	047
354	1987	05	26.94894	11	51	53.22	+20	39	55.5	047
354	1987	06	02.93507	11	55	54.80	+19	52	58.8	047
354	1987	06	05.93681	11	57	54.93	+19	30	54.9	047
371	1988	08	14.05567	23	19	23.59	+05	58	39.9	047
444	1988	08	09.03720	22	55	05.93	+05	27	41.0	047
444	1988	08	15.01238	22	52	23.75	+05	01	13.5	047
451	1987	02	24.12259	12	50	29.50	+17	42	49.2	047
451	1987	02	25.15140	12	50	03.35	+17	50	21.9	047
451	1987	02	27.06944	12	49	10.95	+18	04	25.6	047
451	1987	03	22.04238	12	34	03.84	+20	32	31.1	047
451	1987	04	22.97282	12	10	56.35	+21	25	12.6	047
451	1987	04	24.97768	12	09	53.04	+21	21	06.3	047
451	1987	04	27.90167	12	08	28.73	+21	13	40.1	047
451	1987	04	27.96875	12	08	26.98	+21	13	28.6	047
451	1987	04	28.89052	12	08	02.32	+21	10	46.1	047
451	1987	04	29.93490	12	07	35.93	+21	07	30.1	047
451	1987	04	30.92987	12	07	11.85	+21	04	12.6	047

471	1988 04 22.95127	12 20 36.91	+18 59 44.9			047
471	1988 05 09.97083	12 12 40.99	+18 19 27.1			047
471	1988 05 12.95041	12 11 50.54	+18 07 42.4			047
532	1987 02 24.13057	13 25 10.29	+17 19 21.9			047
532	1987 02 25.16736	13 25 12.28	+17 30 34.7			047
532	1987 03 22.06599	13 16 37.46	+21 50 33.0			047
532	1987 04 14.93916	12 58 15.60	+23 52 18.1			047
532	1987 04 16.94195	12 56 45.31	+23 53 11.3			047
532	1987 04 22.99435	12 52 32.27	+23 46 45.8			047
532	1987 04 25.02005	12 51 15.76	+23 41 36.8			047
532	1987 04 27.98368	12 49 32.95	+23 31 29.0			047
532	1987 04 30.93572	12 48 01.64	+23 18 24.0			047
532	1987 05 01.95862	12 47 33.11	+23 13 11.8			047
532	1987 05 24.85606	12 43 54.12	+20 03 25.8			047
532	1987 05 25.96144	12 44 04.10	+19 51 26.8			047
532	1987 05 26.97012	12 44 15.01	+19 40 19.7			047
532	1987 06 02.94688	12 46 11.99	+18 19 15.1			047
532	1987 06 05.95452	12 47 23.76	+17 42 23.0			047
772	1988 04 23.01367	15 12 49.29	+01 47 54.1			047
772	1988 05 12.97679	14 51 06.33	+00 11 18.1			047

056 Skalnate Pleso
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C-05960 Tatranska Lomnica, Czechoslovakia
Observers J. Svoren, T. Cisko, L. Petrik, G. Cervak, E. M. Pittich,
P. Rychtarcik, M. Antal, J. Fabricius
0.3-m f/5 astrograph

1990 SQ	1990 12 14.71650	22 33 12.63	+42 16 14.5		B	056
1990 SQ	1990 12 14.76604	22 33 21.69	+42 18 00.6		B	056
1990 SQ	1990 12 17.68854	22 43 24.65	+44 08 27.8		B	056
1990 SQ	1990 12 17.76638	22 43 41.21	+44 11 22.5			056
18	1973 05 04.87292	13 02 56.85	+06 17 49.5			056
18	1973 05 04.93125	13 02 54.45	+06 17 59.7			056
23	1973 05 04.87292	12 50 36.72	+06 53 51.3			056
23	1973 05 04.93125	12 50 34.78	+06 53 36.7			056
25	1975 02 17.94028	09 18 21.43	-15 20 31.4			056
25	1975 02 18.00208	09 18 17.91	-15 20 05.4			056
30	1973 05 04.85764	12 14 03.20	-04 43 56.5			056
30	1973 05 04.91319	12 14 01.70	-04 43 45.9			056
51	1975 05 17.96840	17 50 51.87	-07 18 17.6			056
51	1975 05 17.97569	17 50 51.61	-07 18 15.2			056
51	1975 05 17.99722	17 50 50.85	-07 18 09.1			056
148	1975 03 12.12118	14 46 47.07	+13 29 06.1			056
148	1975 03 12.13924	14 46 46.89	+13 29 16.9			056
148	1975 03 12.15451	14 46 46.74	+13 29 26.5			056
291	1974 09 12.97708	01 16 19.90	+06 36 28.9			056
291	1974 09 13.04722	01 16 17.36	+06 36 08.9			056
305	1973 05 04.85764	12 18 38.32	-03 22 25.8			056
305	1973 05 04.91319	12 18 37.13	-03 22 15.9			056
389	1975 07 08.93611	17 52 41.78	-25 03 26.3			056
389	1975 07 08.97847	17 52 39.56	-25 03 17.4			056
480	1975 08 10.96944	22 58 12.27	+26 05 19.1			056
480	1975 08 11.03472	22 58 10.09	+26 05 28.8			056
480	1975 08 14.06806	22 56 22.47	+26 11 47.9			056
480	1975 09 01.96181	22 42 16.56	+25 43 42.7			056
480	1975 09 02.01944	22 42 13.62	+25 43 26.5			056
480	1975 09 23.87639	22 25 27.56	+22 49 33.1			056
480	1975 09 27.80139	22 23 07.64	+22 06 29.2			056

480	1975 09 27.96319	22 23 02.16	+22 04 38.6				056
480	1975 09 28.03715	22 22 59.58	+22 03 47.9				056
480	1975 10 23.74757	22 17 05.79	+16 56 55.5				056
480	1975 10 23.78993	22 17 06.03	+16 56 25.0				056
480	1975 10 27.85382	22 17 46.37	+16 10 38.8			T	056
480	1975 11 09.84375	22 22 44.69	+13 59 56.1				056
480	1975 11 09.87778	22 22 45.86	+13 59 36.7				056
528	1973 05 04.87292	12 54 17.26	+03 38 17.9				056
528	1973 05 04.93125	12 54 15.29	+03 38 13.0				056
532	1975 10 27.90208	00 46 23.00	-19 14 55.2				056
532	1975 10 27.95556	00 46 20.79	-19 14 57.0				056
568	1974 11 01.73611	01 17 52.03	+28 18 32.0				056
568	1974 11 01.80903	01 17 48.97	+28 17 35.4				056
584	1974 11 01.73611	01 27 02.21	+31 24 55.9				056
584	1974 11 01.80903	01 26 59.00	+31 24 08.8				056
620	1990 10 22.93299	06 55 09.43	+32 17 07.6				056
620	1990 10 22.96563	06 55 10.44	+32 17 12.1				056
620	1990 10 24.02188	06 55 46.21	+32 20 35.0				056
620	1990 10 24.05463	06 55 47.04	+32 20 41.4				056
700	1973 05 04.87292	12 59 13.16	+06 26 25.6				056
700	1973 05 04.93125	12 59 11.06	+06 26 16.1				056
704	1975 11 11.10417	07 32 44.72	+24 34 12.7				056
704	1975 11 11.12118	07 32 44.74	+24 34 09.1				056
704	1975 11 11.12986	07 32 44.77	+24 34 06.8				056
704	1975 12 28.98576	07 05 38.69	+21 46 26.4				056
990	1974 09 12.97708	00 57 14.56	+09 11 34.8				056

091 Aurec-sur-Loire
R. Chanal, Observatoire de Nurol, F-43110 Aurec-sur-Loire, France
0.41-m reflector

1990 OL	1990 08 20.91944	21 42 15.94	-10 10 07.0				091
1990 SQ	1990 11 12.90104	21 27 40.81	+19 27 11.8				091
1990 SQ	1990 11 12.91805	21 27 41.82	+19 27 57.6				091
329	1990 06 25.92986	17 37 16.21	+03 16 52.6				091
329	1990 06 26.00347	17 37 12.28	+03 16 43.2				091
1951	1990 07 18.96944	20 54 30.86	+12 03 31.8				091
1951	1990 07 19.02778	20 54 26.02	+11 58 30.5				091
1951	1990 07 19.03472	20 54 25.35	+11 57 58.8				091
1951	1990 07 19.94028	20 53 13.30	+10 39 16.4				091
1951	1990 07 20.00139	20 53 08.22	+10 33 54.7				091
1951	1990 07 20.00555	20 53 07.83	+10 33 29.5				091
1951	1990 07 20.01250	20 53 07.33	+10 32 57.8				091
1951	1990 07 21.93750	20 50 24.01	+07 35 04.0				091
1951	1990 07 21.94444	20 50 23.53	+07 34 27.9				091
1951	1990 07 21.95486	20 50 22.39	+07 33 27.7				091
2448	1990 06 25.95069	17 42 10.66	-03 53 20.7				091
2448	1990 06 26.02014	17 42 07.02	-03 53 46.8				091
2666	1990 08 20.89167	21 17 36.63	+02 06 38.1				091
3086	1990 08 18.97083	21 21 45.60	+01 56 11.3				091
3086	1990 08 19.02708	21 21 40.55	+01 56 26.8				091
3086	1990 08 20.02500	21 20 13.57	+02 01 55.3				091
3086	1990 08 20.89167	21 18 59.06	+02 06 29.8				091
3752	1990 08 17.95625	21 32 25.02	-02 44 48.2				091
3752	1990 08 18.94028	21 30 03.09	-03 48 44.8				091
3752	1990 08 18.95208	21 30 01.21	-03 49 35.0				091
3752	1990 08 18.95891	21 30 00.66	-03 49 56.8				091
3752	1990 08 19.99652	21 27 29.50	-04 58 00.9				091
3752	1990 08 20.90625	21 25 16.22	-05 58 44.1				091

190 Gissar
S. I. Gerasimenko, Institute of Astrophysics, Sviridenko St. 22, 734670 Dushanbe, U.S.S.R.
Observers S. I. Gerasimenko, R. Bakirov
Measurer S. I. Gerasimenko
0.4-m astrograph

4	1990 09 24.98635	04 00 57.99	+11 51 19.4			190
8	1990 07 31.78956	17 59 21.67	-22 39 37.2			190
9	1990 09 17.97156	07 11 37.41	+23 28 22.2			190
14	1990 09 17.92244	02 38 26.34	+03 54 12.3			190
14	1990 09 24.91346	02 35 44.51	+03 28 37.9			190
19	1990 09 16.99262	05 47 51.17	+22 37 00.6			190
20	1990 09 11.68904	21 31 12.75	-13 44 19.2			190
29	1990 07 31.86419	22 19 54.08	-16 16 22.1			190
40	1990 07 31.81560	21 55 49.86	-18 16 37.6			190
42	1990 09 16.85170	00 52 15.49	-12 45 27.7			190
42	1990 09 24.76387	00 45 32.62	-13 26 00.2			190
58	1990 09 11.68904	21 35 30.86	-12 58 26.6			190
80	1990 09 24.96066	03 13 33.39	+20 59 58.5			190
94	1990 07 31.86419	22 15 36.02	-18 48 42.7			190
139	1990 09 16.88294	01 02 25.65	+09 15 59.6			190
139	1990 09 24.78747	00 56 12.34	+09 01 52.8			190
211	1990 09 24.71146	00 25 08.10	+09 02 53.7			190
234	1990 09 16.77951	00 11 30.31	-17 34 33.6			190
336	1990 09 24.71146	00 32 09.39	+11 31 30.3			190
346	1990 09 17.92244	02 34 47.17	+02 12 22.8			190
346	1990 09 24.91346	02 32 50.06	+01 46 25.9			190
346	1990 09 24.93914	02 32 49.48	+01 46 18.8			190
377	1990 09 24.71146	00 22 39.83	+07 26 21.8			190
408	1990 09 11.66127	21 34 16.61	-06 34 07.0			190
416	1990 09 16.77951	23 55 19.61	-20 57 19.2			190
487	1990 09 24.93914	02 43 24.64	-00 50 18.1			190
492	1990 09 16.88294	01 18 18.56	+06 39 58.3			190
511	1990 09 17.88981	02 00 23.70	-12 17 17.6			190
511	1990 09 24.89125	01 57 17.99	-13 07 57.3			190
597	1990 09 16.77951	23 53 41.67	-18 04 31.1			190
599	1990 09 17.85302	01 59 14.35	-06 22 24.8			190
599	1990 09 24.86487	01 53 51.33	-06 05 12.1			190
614	1990 09 16.94681	01 58 45.79	+15 48 57.9			190
614	1990 09 17.81484	01 58 31.48	+15 46 02.2			190
614	1990 09 24.84335	01 55 51.17	+15 17 17.4			190
671	1990 09 16.94681	02 01 03.60	+16 36 36.0			190
671	1990 09 17.81484	02 00 41.54	+16 37 24.8			190
671	1990 09 24.84335	01 57 06.67	+16 40 41.8			190
678	1990 09 16.82116	00 56 33.43	+18 04 39.6			190
678	1990 09 24.74027	00 51 20.85	+17 57 12.6			190
743	1990 09 24.71146	00 26 25.56	+08 30 50.2			190
785	1990 09 17.85302	01 56 24.63	-04 01 00.1			190
785	1990 09 24.86487	01 51 52.00	-04 33 43.8			190
838	1990 09 16.82116	00 46 37.74	+19 10 38.3			190
838	1990 09 24.74027	00 41 23.11	+18 30 20.9			190
850	1990 07 31.81560	22 03 39.26	-20 07 32.1			190
944	1990 09 16.91279	01 38 18.65	-04 20 51.4			190
944	1990 09 24.81836	01 29 39.78	-03 31 43.3			190
1105	1990 09 16.85170	00 56 41.43	-10 52 49.5			190
1105	1990 09 24.76387	00 51 26.17	-11 49 30.6			190
1135	1990 09 16.94681	01 55 49.26	+15 15 09.9			190
1135	1990 09 17.81484	01 55 27.35	+15 15 44.7			190
1135	1990 09 24.84335	01 51 44.46	+15 16 33.2			190

1189		1990	09	11.63003	21	20	00.98	-02	15	38.2		190
1590		1990	09	24.71146	00	36	19.50	+09	26	56.3		190
1780		1990	09	24.74027	00	52	46.60	+19	44	46.3		190
2189		1990	07	31.86419	22	17	08.70	-16	10	43.8		190
3284		1990	09	16.91279	01	36	20.62	-04	14	21.3		190
3284		1990	09	24.81836	01	32	01.11	-04	31	20.6		190

364 JCPM Kagoshima Station
M. Takeishi, Odori 4, Hamatonbetsu Esashigun, Hokkaido 098-57, Japan
Observer M. Mukai
Measurer M. Takeishi
0.25-m f/4.2 Wright-Schmidt telescope

1969	TC2	1990	10	18.59167	02	04	32.65	+09	49	23.9	16.5	364
1969	TC2	1990	10	18.60972	02	04	31.53	+09	49	22.2		364
1985	TP	1990	10	17.63889	02	29	44.32	+13	00	35.4	17	364
1985	TP	1990	10	17.65625	02	29	43.64	+13	00	31.9		364
1988	BL	1990	11	13.57847	03	17	29.80	+07	15	38.6	16	364
1988	BL	1990	11	13.59583	03	17	28.73	+07	15	34.4		364
1988	BL	1990	11	14.51597	03	16	33.31	+07	12	18.2		364
1988	BL	1990	11	14.53333	03	16	32.23	+07	12	14.2		364
1988	BL	1990	11	15.51944	03	15	32.46	+07	08	51.8		364
1988	BL	1990	11	15.53681	03	15	31.40	+07	08	47.9		364
1990	WF3	1990	11	12.57917	03	55	31.59	+14	53	40.0	16.5	364
1990	WF3	1990	11	12.60069	03	55	30.35	+14	53	36.0		364
120		1990	10	13.56597	01	22	08.05	+15	52	49.6	13	364
120		1990	10	13.58333	01	22	07.15	+15	52	47.2		364
614		1990	10	17.52083	01	40	36.91	+12	49	15.1	15	364
614		1990	10	17.53958	01	40	35.97	+12	49	05.6		364
802		1990	04	24.53472	13	15	48.97	-11	33	34.2	16.5	364
802		1990	04	24.55208	13	15	47.61	-11	33	31.1		364
1059		1990	10	18.59167	01	55	17.88	+09	25	12.2	15	364
1059		1990	10	18.60972	01	55	16.92	+09	25	02.8		364
1142		1990	11	14.64236	04	20	25.83	+18	36	22.2	16	364
1142		1990	11	14.65972	04	20	25.03	+18	36	20.2		364
1142		1990	11	15.65417	04	19	39.04	+18	34	18.6	16	364
1142		1990	11	15.67153	04	19	38.21	+18	34	15.9		364
1292		1990	10	17.52083	01	45	16.33	+14	13	36.6	16	364
1292		1990	10	17.53958	01	45	15.19	+14	13	30.9		364
1292		1990	10	23.55486	01	39	44.68	+13	40	38.8		364
1292		1990	10	23.57222	01	39	43.80	+13	40	32.8		364
1292		1990	10	26.60278	01	36	58.38	+13	23	23.7		364
1292		1990	10	26.62014	01	36	57.43	+13	23	17.8		364
1305		1990	04	24.57361	14	15	18.80	-11	46	54.0	15	364
1305		1990	04	24.59097	14	15	18.07	-11	46	52.0		364
1358		1990	10	17.59583	02	06	03.95	+13	20	23.8	15.5	364
1358		1990	10	17.61389	02	06	02.81	+13	20	21.2		364
1494		1990	10	17.63889	02	23	22.69	+12	47	56.6	15	364
1494		1990	10	17.65625	02	23	21.70	+12	47	50.8		364
1637		1990	10	17.52083	01	36	41.93	+11	48	28.5	16	364
1637		1990	10	17.53958	01	36	40.84	+11	48	27.0		364
1777		1990	10	26.60278	01	34	05.14	+14	16	24.5	16	364
1777		1990	10	26.62014	01	34	04.04	+14	16	17.5		364
1841		1990	10	18.55486	01	46	15.15	+09	46	51.7	17	364
1841		1990	10	18.57222	01	46	14.45	+09	46	48.9		364
2203		1990	10	17.63889	02	26	39.71	+13	41	39.6	16	364
2203		1990	10	17.65625	02	26	38.95	+13	41	37.3		364
2275		1990	10	23.59375	02	20	05.24	+10	15	16.1	16	364
2275		1990	10	23.61111	02	20	04.33	+10	15	05.2		364
2323		1990	04	24.53472	13	14	39.63	-10	14	22.8	16.5	364

2323	1990	04	24.55208	13	14	38.86	-10	14	18.7	364
3014	1990	10	18.59167	02	02	13.94	+10	33	54.8	16 364
3014	1990	10	18.60972	02	02	12.79	+10	33	49.4	364
3148	1990	10	17.55764	02	02	27.48	+13	03	55.8	16.5 364
3148	1990	10	17.57500	02	02	26.51	+13	03	50.5	364
3762	1990	10	26.63958	03	13	40.96	+15	37	42.5	17 364
3762	1990	10	26.65694	03	13	40.08	+15	37	36.2	364
4634	1990	10	18.51806	01	34	24.78	+11	15	46.6	16.5 364
4634	1990	10	18.53542	01	34	23.81	+11	15	44.2	364
4659	1990	10	17.55764	01	56	30.38	+12	41	50.6	16.5 364
4659	1990	10	17.57500	01	56	29.51	+12	41	47.5	364
4659	1990	10	26.52292	01	48	23.75	+12	20	33.1	364
4659	1990	10	26.54028	01	48	22.70	+12	20	29.2	364

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

1973	SK1	1990	11	23.73889	04	02	33.24	+08	49	27.8 18 372
1973	SK1	1990	11	23.75000	04	02	32.86	+08	49	27.0 372
1979	MR3	1990	11	21.49340	01	07	31.84	-05	33	39.5 18 372
1979	MR3	1990	11	23.61336	01	07	03.78	-05	26	28.6 18 372
1979	SU2	1990	10	15.78125	01	17	15.59	+14	38	48.8 17 372
1979	SU2	1990	10	15.79062	01	17	15.23	+14	38	44.5 372
1980	VA	1990	10	15.58264	23	03	50.54	-07	57	57.8 17.5 372
1980	VA	1990	10	15.59514	23	03	50.38	-07	57	59.6 372
1989	EO1	1990	08	15.49687	19	44	02.68	-25	52	11.5 18.5 372
1989	EO1	1990	08	15.51146	19	44	02.03	-25	52	09.4 372
1990	TH3	1990	11	14.65035	02	28	14.48	+10	37	09.0 18 372
1990	TH3	1990	11	14.66042	02	28	13.98	+10	37	09.4 372
1990	TH3	1990	11	15.65382	02	27	18.28	+10	40	48.4 18 372
1990	TH3	1990	11	15.66458	02	27	18.11	+10	40	53.5 372
1990	UC2	1990	11	10.56580	01	03	27.02	-07	20	09.8 18 372
1990	UC2	1990	11	10.57691	01	03	26.40	-07	20	06.8 372
1990	UF2	1990	11	14.65035	02	25	34.39	+10	40	22.6 18 372
1990	UF2	1990	11	14.66042	02	25	33.80	+10	40	18.8 372
1990	UF2	1990	11	15.65382	02	24	37.93	+10	33	18.4 18.5 372
1990	UN2	1990	11	15.67604	02	49	59.47	+15	15	11.6 18 372
1990	UN2	1990	11	15.68646	02	49	58.79	+15	15	10.5 372
1990	UN2	1990	11	17.68542	02	47	51.17	+15	12	45.6 17.5 372
1990	UN2	1990	11	17.69514	02	47	50.47	+15	12	45.6 372
1990	UN2	1990	11	21.57847	02	43	53.58	+15	08	39.6 17.5 372
1990	UN2	1990	11	21.59097	02	43	52.87	+15	08	39.0 372
1990	UN2	1990	11	23.64080	02	41	54.23	+15	06	44.3 17.5 372
1990	UN2	1990	11	23.65243	02	41	53.61	+15	06	44.3 372
1990	UD3	1990	11	17.68542	02	44	21.70	+15	42	39.5 17.5 372
1990	UD3	1990	11	17.69514	02	44	21.13	+15	42	36.6 372
1990	UD3	1990	11	21.57847	02	41	51.41	+15	08	37.0 17 372
1990	UD3	1990	11	21.59097	02	41	51.01	+15	08	33.2 372
1990	UD3	1990	11	23.65243	02	40	39.10	+14	51	22.8 16.5 372
1990	VY1	1990	11	14.73993	04	08	01.21	+10	36	20.5 16.5 372
1990	VY1	1990	11	14.75035	04	08	00.66	+10	36	15.9 372
1990	VY1	1990	11	15.69757	04	07	15.42	+10	26	23.6 16.5 372
1990	VY1	1990	11	15.70799	04	07	14.66	+10	26	17.4 372
1990	VY1	1990	11	23.73889	04	00	34.36	+09	08	01.3 16.5 372
1990	VY1	1990	11	23.75000	04	00	33.75	+09	07	55.4 372
1990	VN2	1990	11	17.63351	02	13	39.78	-10	25	25.2 17.5 372
1990	VN2	1990	11	17.64306	02	13	39.32	-10	25	25.8 372
1990	VP2	1990	11	15.67604	02	49	21.53	+15	06	00.2 17 372
1990	VP2	1990	11	15.68646	02	49	20.63	+15	06	00.9 372

1990	VP2		1990	11	17.68542	02	47	24.37	+15	09	41.0	17	372
1990	VP2		1990	11	17.69514	02	47	23.85	+15	09	44.2		372
1990	VP2		1990	11	21.57847	02	43	44.67	+15	17	17.0	17	372
1990	VP2		1990	11	23.64080	02	41	52.74	+15	21	23.8	16	372
1990	VP2		1990	11	23.65243	02	41	52.26	+15	21	27.3		372
1990	VS2		1990	11	14.73993	04	09	24.15	+11	18	03.2	18	372
1990	VS2		1990	11	14.75035	04	09	23.65	+11	18	02.9		372
1990	VS2		1990	11	17.72882	04	06	31.55	+11	10	19.6	17.5	372
1990	VS2		1990	11	17.74028	04	06	30.86	+11	10	18.7		372
1990	VD3		1990	11	17.70521	02	35	51.75	+19	37	30.7	18	372
1990	VD3		1990	11	17.71597	02	35	51.20	+19	37	28.2		372
1990	VE3		1990	11	23.71562	02	30	26.82	+20	59	11.6	17	372
1990	VE3		1990	11	23.72708	02	30	26.13	+20	59	12.7	17	372
1990	VZ4		1990	11	23.73889	04	03	34.96	+08	52	25.6	18	372
1990	VZ4		1990	11	23.75000	04	03	34.51	+08	52	23.4		372
1990	VS6	*	1990	11	15.67604	02	46	21.73	+15	24	44.1	18	372
1990	VS6		1990	11	15.68646	02	46	21.16	+15	24	36.3		372
1990	VS6		1990	11	17.68542	02	44	41.52	+15	19	34.4	17.5	372
1990	VS6		1990	11	17.69514	02	44	40.81	+15	19	33.5		372
1990	VS6		1990	11	21.57847	02	41	34.67	+15	10	08.5	17.5	372
1990	VS6		1990	11	21.59097	02	41	33.79	+15	10	08.2		372
1990	VS6		1990	11	21.59097	02	41	33.79	+15	10	08.2		372
1990	VS6		1990	11	23.64080	02	40	00.32	+15	05	23.4		372
1990	VS6		1990	11	23.65243	02	39	59.80	+15	05	22.2	17.5	372
1990	WN2		1990	12	12.70521	03	58	43.61	+16	09	14.7	16.5	372
1990	WN2		1990	12	12.71528	03	58	43.11	+16	09	18.1		372
1990	WA3	*	1990	11	17.68542	02	45	49.06	+14	59	04.3	18	372
1990	WA3		1990	11	17.69514	02	45	48.45	+14	59	03.8		372
1990	WA3		1990	11	21.57847	02	42	53.39	+14	47	15.0	18	372
1990	WA3		1990	11	21.59097	02	42	52.89	+14	47	14.0		372
1990	XQ	*	1990	12	10.60729	03	24	28.73	+14	48	14.9	18	372
1990	XQ		1990	12	10.61979	03	24	28.17	+14	48	13.7		372
1990	XQ		1990	12	12.60764	03	23	10.52	+14	42	54.3	18	372
1990	XQ		1990	12	12.61458	03	23	09.99	+14	42	55.4		372
1990	XR	*	1990	12	10.60729	03	28	09.95	+14	44	12.9	18	372
1990	XR		1990	12	10.61979	03	28	09.52	+14	44	12.3		372
1990	XR		1990	12	12.62743	03	27	04.70	+14	38	30.2	18	372
1990	XR		1990	12	12.64097	03	27	04.27	+14	38	28.9		372
1990	XS	*	1990	12	10.60729	03	28	20.48	+14	46	38.7	18	372
1990	XS		1990	12	10.61979	03	28	19.86	+14	46	46.9		372
1990	XS		1990	12	12.65503	03	26	29.92	+15	03	38.6	18	372
1990	XS		1990	12	12.66667	03	26	29.44	+15	03	43.1		372
1990	XU	*	1990	12	10.74375	07	55	31.60	+13	50	03.2	16.5	372
1990	XU		1990	12	10.75486	07	55	31.28	+13	50	05.1		372
1990	XU		1990	12	19.68542	07	50	59.45	+14	16	13.5	17	372
1990	XU		1990	12	19.70069	07	50	58.93	+14	16	18.8		372
1990	XU		1990	12	21.65833	07	49	45.25	+14	23	16.1	18	372
1990	XU		1990	12	21.67153	07	49	44.74	+14	23	20.4		372
1990	YB	*	1990	12	16.74722	08	23	11.39	+17	40	17.3	17.5	372
1990	YB		1990	12	16.75972	08	23	11.03	+17	40	21.4		372
1990	YB		1990	12	19.71215	08	21	48.24	+17	45	53.0	18	372
1990	YB		1990	12	19.72535	08	21	47.92	+17	45	54.8		372
1990	YB		1990	12	21.69549	08	20	45.88	+17	50	02.2	18	372
1990	YB		1990	12	21.70660	08	20	45.55	+17	50	05.5		372
1990	YP	*	1990	12	19.73785	09	16	25.41	+19	21	34.4	18	372
1990	YP		1990	12	19.74965	09	16	25.21	+19	21	28.8		372
1990	YP		1990	12	23.72986	09	16	04.84	+18	50	34.8	18	372
1990	YP		1990	12	23.74271	09	16	04.57	+18	50	30.2		372
1990	YP		1990	12	24.64306	09	15	54.77	+18	43	34.8	18	372

1990	YP		1990	12	24.66528	09	15	54.50	+18	43	26.0		372
1990	YU	*	1990	12	12.65503	03	28	06.92	+14	47	54.6	17.5	372
1990	YU		1990	12	12.66667	03	28	06.42	+14	47	53.0		372
1990	YU		1990	12	19.59653	03	24	08.08	+14	41	00.3	17.5	372
1990	YX	*	1990	12	24.58958	07	05	55.95	+31	58	33.1	17	372
1990	YX		1990	12	24.60139	07	05	55.04	+31	58	36.5		372
1990	YX		1990	12	24.61875	07	05	54.03	+31	58	39.4		372
1990	YX		1991	01	06.52535	06	51	36.49	+32	18	56.7	17.5	372
1990	YX		1991	01	06.53750	06	51	35.64	+32	18	59.4		372
1991	AP	*	1991	01	09.68542	09	30	01.32	+18	46	25.4	17.5	372
1991	AP		1991	01	09.69792	09	30	00.79	+18	46	27.6		372
1991	AP		1991	01	12.60451	09	27	42.23	+18	53	48.0	17.5	372
1991	AP		1991	01	12.62361	09	27	41.32	+18	53	53.4		372
1003			1990	10	09.53014	23	05	46.96	-07	23	29.7	16	372
1003			1990	10	09.53125	23	05	46.65	-07	23	31.8		372
1003			1990	10	10.50642	23	05	16.83	-07	26	45.7	16.5	372
1003			1990	10	15.58264	23	02	58.26	-07	41	23.5	17	372
1003			1990	10	15.59514	23	02	57.98	-07	41	25.9		372
1203			1990	12	10.60729	03	28	45.9	+15	21	07	18	372
1203			1990	12	10.61979	03	28	45.6	+15	21	04		372
1748			1990	12	10.60729	03	29	02.87	+14	49	16.5	16.5	372
1748			1990	12	10.61979	03	29	02.50	+14	49	12.4		372
1748			1990	12	12.62743	03	27	55.23	+14	46	49.5	16.5	372
1748			1990	12	12.64097	03	27	54.78	+14	46	49.0		372
1748			1990	12	12.65503	03	27	54.21	+14	46	48.2	17.5	372
1748			1990	12	12.66667	03	27	53.76	+14	46	47.7		372
1992			1990	12	16.67326	03	43	24.64	+06	21	15.8	17.5	372
1992			1990	12	16.68472	03	43	24.24	+06	21	15.5		372
2036			1990	11	23.71562	02	28	23.47	+20	55	44.6	16	372
2036			1990	11	23.72708	02	28	22.89	+20	55	40.8	16	372
2122			1990	12	23.72986	09	16	25.66	+18	54	29.5	16.5	372
2122			1990	12	23.74271	09	16	25.34	+18	54	32.3		372
2729			1990	12	23.78194	09	03	26.34	+20	32	49.6	16.5	372
2729			1990	12	23.79479	09	03	25.95	+20	32	51.2		372
2769			1990	11	14.65035	02	26	23.64	+11	12	20.6	17.5	372
2769			1990	11	14.66042	02	26	23.31	+11	12	18.1		372
2769			1990	11	15.65382	02	25	38.10	+11	09	10.2	17.5	372
2769			1990	11	15.66458	02	25	37.76	+11	09	08.4		372
3030			1991	01	11.76979	11	00	38.05	+03	25	44.5	17.5	372
3030			1991	01	12.63750	11	00	29.14	+03	24	28.0	17.5	372
3638			1990	12	19.76111	09	09	21.91	+19	38	58.9	17.5	372
3638			1990	12	19.77222	09	09	21.65	+19	39	01.5		372
3638			1990	12	21.76354	09	08	53.02	+19	48	02.9	17.5	372
3638			1990	12	21.77569	09	08	52.76	+19	48	07.0		372
4142			1990	12	10.52153	02	14	38.93	+11	02	49.4	16	372
4142			1990	12	10.53750	02	14	37.88	+11	03	09.8		372
4191			1990	12	12.65503	03	27	58.72	+15	29	38.4	17.5	372
4191			1990	12	12.66667	03	27	58.46	+15	29	34.9		372
4191			1990	12	19.58542	03	23	42.86	+14	56	19.0	18	372
4191			1990	12	19.59653	03	23	42.66	+14	56	13.7		372

374 Minami-Oda
T. Nomura, 1-1-8, Yamate, Tarumi-Ku, Kobe 655, Japan
Observers T. Nomura, M. Sugano
Measurer T. Nomura
0.25-m f/3.4 Schmidt camera
AGK3

1990	TX		1990	11	11.48611	01	33	59.06	+03	17	15.6	16.5	374
1990	UQ2		1990	12	21.58229	02	54	15.22	+22	37	36.1	16.5	374

1990	VZ2		1990	12	21.58229	03	02	32.54	+23	24	01.1	17.0	374
1990	XA	*	1990	12	08.51979	06	21	30.97	+25	09	10.8	15.5	374
1990	XA		1990	12	08.56250	06	21	28.92	+25	09	07.3		374
1990	XA		1990	12	10.58285	06	19	40.93	+25	05	22.7		374
1990	XA		1990	12	10.60837	06	19	39.53	+25	05	19.1		374

385 Nihondaira Observatory Oohira station
T. Urata, 6-1, Muramatsuhara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan
0.30-m f/3.8 hyperboloid astrocamera
AGK3

1990	SO4		1990	12	23.48403	01	25	42.75	+20	29	46.9	17	385
1990	SO4		1990	12	23.49583	01	25	43.50	+20	29	46.1		385
1990	SO4		1990	12	23.50764	01	25	44.17	+20	29	45.7		385
1990	UB2		1990	11	22.54236	02	12	58.29	+05	51	57.1	17	385
1990	UB2		1990	11	22.57292	02	12	56.81	+05	51	59.5		385
1990	UJ4		1990	10	26.64236	02	37	34.97	+07	00	27.6	17	385
1990	UJ4		1990	10	26.66944	02	37	32.71	+07	00	24.3		385
1990	UL4		1990	10	26.64236	02	38	22.53	+06	01	40.1	17	385
1990	UL4		1990	10	26.66944	02	38	20.72	+06	01	37.5		385
1990	US4		1990	10	26.64236	02	40	09.44	+07	25	53.6	16.5	385
1990	US4		1990	10	26.66944	02	40	07.51	+07	25	42.5		385
1990	VH3		1990	11	22.66736	03	57	21.23	+23	46	55.7	16	385
1990	VW6		1990	11	11.64236	02	14	50.33	+07	44	37.5	17	385
1990	VW6		1990	11	11.66736	02	14	49.23	+07	44	36.7		385
1990	VW6		1990	11	16.63889	02	10	25.74	+07	37	00.5	17	385
1990	VY6		1990	10	26.64236	02	42	24.67	+06	18	46.0	16	385
1990	VY6		1990	10	26.66944	02	42	23.15	+06	18	45.0		385
1990	VY6	*	1990	11	10.63750	02	26	47.41	+06	50	54.4	16.5	385
1990	VY6		1990	11	10.66250	02	26	45.67	+06	50	57.3		385
1990	VY6		1990	11	16.62500	02	21	00.20	+07	08	39.6	16.5	385
1990	VY6		1990	11	16.65278	02	20	58.99	+07	08	43.8		385
1990	VY6		1990	11	22.60347	02	15	50.29	+07	29	25.5	16.5	385
1990	VY6		1990	11	22.63681	02	15	48.86	+07	29	32.8		385
1990	WL		1990	10	26.60417	02	16	54.0	-00	56	52	16.5 N	385
1990	WL		1990	10	26.62847	02	16	52.7	-00	56	58	N	385
1990	WZ3	*	1990	11	22.65208	03	44	25.73	+23	43	19.7	16	385
1990	WZ3		1990	11	22.68264	03	44	23.73	+23	43	05.9		385

399 Kushiro
H. Kaneda, Taiyo MS 2-H, 2 chome 2-15, kawazoe 8 jo, Minami-ku,
Sapporo 005, Japan
Observers S. Ueda, M. Matsuyama
Measurers H. Kaneda, K. Watanabe
0.16-m f/3.8 Wright-Schmidt camera, 0.25-m f/3.5 Schmidt camera
AGK3

1981	VC1		1989	01	15.68750	07	50	14.13	+25	50	08.4	16.5	399
1981	VC1		1989	01	15.70174	07	50	12.93	+25	50	12.3		399
1982	FP3		1990	10	22.51840	01	35	00.16	+07	38	49.9	16.5	399
1982	FP3		1990	10	22.53970	01	34	59.23	+07	38	45.0		399
1982	FP3		1990	10	22.55660	01	34	58.20	+07	38	41.0		399
1990	FU		1990	03	18.61962	12	09	11.50	-05	17	38.7	16.5	399
1990	FU		1990	03	18.63403	12	09	10.86	-05	17	30.6		399
1990	TR		1990	12	08.43125	02	02	47.08	+27	29	40.5	16.5	399
1990	TR		1990	12	08.44618	02	02	47.80	+27	29	40.7		399
1990	UG3		1990	11	24.61276	02	53	40.86	+15	41	59.9	15.5	399
1990	UG3		1990	11	24.63073	02	53	40.00	+15	42	03.1		399
1990	VZ		1990	11	12.56389	03	32	30.55	+20	04	20.0	15.5	399
1990	VZ		1990	11	12.58206	03	32	29.68	+20	04	18.2		399

1990	VZ		1990	11	12.59792	03	32	28.76	+20	04	17.8		399
1990	VZ		1990	11	13.53299	03	31	40.27	+20	03	01.3	16	399
1990	VZ		1990	11	13.54826	03	31	39.42	+20	02	59.8		399
1990	VZ		1990	11	21.50694	03	24	42.62	+19	50	51.9	16	399
1990	VZ		1990	11	21.52292	03	24	41.73	+19	50	49.4		399
1990	VZ		1990	11	24.55909	03	22	07.22	+19	45	53.6	16	399
1990	VZ		1990	11	24.57465	03	22	06.35	+19	45	52.4		399
1990	VN3		1990	11	17.53125	03	50	03.75	+28	22	00.8	17	399
1990	VN3		1990	11	17.54583	03	50	02.66	+28	21	59.0		399
1990	VN3		1990	11	19.49583	03	47	35.18	+28	18	46.9	16.5	399
1990	VN3		1990	11	19.51076	03	47	34.24	+28	18	45.8		399
1990	VO3		1990	12	13.55729	05	07	47.15	+16	51	03.9	16.5	399
1990	VO3		1990	12	13.56930	05	07	46.55	+16	51	02.4		399
1990	VO3		1990	12	13.60255	05	07	44.65	+16	50	54.0		399
1990	VO3		1990	12	13.61881	05	07	43.69	+16	50	50.3		399
1990	VO3		1990	12	15.52569	05	06	02.25	+16	43	54.7	16.5	399
1990	VO3		1990	12	15.54063	05	06	01.44	+16	43	54.4		399
1990	VZ6		1990	12	13.46528	04	03	40.36	+30	56	21.9	16.5	399
1990	VZ6		1990	12	13.48021	04	03	39.65	+30	56	21.4		399
1990	VZ6		1990	12	13.49659	04	03	38.73	+30	56	21.1		399
1990	VZ6		1990	12	15.49028	04	01	53.89	+30	54	11.5	17	399
1990	VZ6		1990	12	15.50521	04	01	52.97	+30	54	09.3		399
1990	WT2		1990	12	13.63889	07	52	49.05	+33	23	22.6	16	399
1990	WT2		1990	12	13.65972	07	52	48.36	+33	23	28.9		399
1990	WT2		1990	12	24.60417	07	45	43.02	+34	06	18.8	15.5	399
1990	WT2		1990	12	24.61875	07	45	42.35	+34	06	23.4		399
1990	WA4	*	1990	11	17.53125	03	38	47.06	+29	31	35.7	16.5	399
1990	WA4		1990	11	17.54583	03	38	45.94	+29	31	24.9		399
1990	WA4		1990	11	17.56181	03	38	44.94	+29	31	15.8		399
1990	WA4		1990	11	19.49583	03	36	49.88	+29	12	47.6	16.5	399
1990	WA4		1990	11	19.51076	03	36	48.80	+29	12	39.4		399
1990	WB4		1990	11	17.57986	04	02	31.88	+28	01	17.4	16.5	399
1990	WB4		1990	11	17.59479	04	02	30.83	+28	01	13.2		399
1990	WB4		1990	11	17.61160	04	02	29.96	+28	01	07.1		399
1990	WB4		1990	11	19.52957	04	00	46.35	+27	52	02.6	16.5	399
1990	WB4		1990	11	19.54537	04	00	45.44	+27	51	56.7		399
1990	XH	*	1990	12	08.46806	03	51	31.07	+03	19	20.3	16	399
1990	XH		1990	12	08.48368	03	51	30.36	+03	19	19.7		399
1990	XH		1990	12	08.50139	03	51	29.59	+03	19	19.4		399
1990	XH		1990	12	13.51910	03	48	09.30	+03	18	28.3	16.5	399
1990	XH		1990	12	13.53507	03	48	08.76	+03	18	25.5		399
1990	XH		1990	12	23.53958	03	42	44.26	+03	29	04.1	16.5	399
1990	XH		1990	12	23.55903	03	42	43.71	+03	29	06.6		399
1990	XO	*	1990	12	13.55729	05	11	16.22	+17	40	03.1	15.5	399
1990	XO		1990	12	13.56930	05	11	15.40	+17	40	05.4		399
1990	XO		1990	12	13.60255	05	11	13.19	+17	40	15.3		399
1990	XO		1990	12	13.61881	05	11	12.14	+17	40	19.2		399
1990	XO		1990	12	15.52569	05	09	11.74	+17	48	45.6	15.5	399
1990	XO		1990	12	15.54063	05	09	10.76	+17	48	51.7		399
1990	YC	*	1990	12	17.60370	07	29	51.78	+23	21	09.7	16.5	399
1990	YC		1990	12	17.62500	07	29	50.97	+23	21	15.0		399
1990	YC		1990	12	17.64282	07	29	49.91	+23	21	19.3		399
1990	YC		1990	12	19.59028	07	28	14.35	+23	29	31.3	16.5	399
1990	YC		1990	12	19.61389	07	28	13.13	+23	29	36.2		399
1990	YC		1991	01	05.44236	07	10	33.61	+24	41	16.5	16	399
1990	YC		1991	01	05.45833	07	10	32.42	+24	41	20.0		399
1990	YC		1991	01	05.47361	07	10	31.39	+24	41	24.5		399
1990	YG	*	1990	12	19.69213	08	10	03.41	+17	09	35.7	16	399
1990	YG		1990	12	19.71285	08	10	02.61	+17	09	42.7		399

1990 YG		1990 12 23.58547	08 07 36.86	+17 29 13.8				16		399
1990 YG		1990 12 23.60660	08 07 35.80	+17 29 19.6						399
1990 YK	*	1990 12 19.69213	08 01 08.55	+16 25 40.7				17		399
1990 YK		1990 12 19.71285	08 01 07.82	+16 25 40.8						399
1990 YK		1990 12 23.58547	07 59 07.36	+16 28 55.1				16.5		399
1990 YK		1990 12 23.60660	07 59 06.62	+16 28 57.5						399
1990 YL	*	1990 12 23.63194	08 45 05.61	+23 21 09.4				16.5		399
1990 YL		1990 12 23.65336	08 45 05.06	+23 21 12.6						399
1990 YL		1990 12 23.66979	08 45 04.73	+23 21 14.9						399
1990 YL		1990 12 24.58472	08 44 42.74	+23 24 24.9				16.5		399
1990 YL		1990 12 24.66944	08 44 40.49	+23 24 42.1						399
1990 YL		1990 12 24.68472	08 44 40.12	+23 24 44.3						399
1990 YM	*	1990 12 23.63194	08 47 59.58	+23 20 14.6				15.5		399
1990 YM		1990 12 23.65336	08 47 59.66	+23 20 43.6						399
1990 YM		1990 12 23.66979	08 47 59.66	+23 21 07.6						399
1990 YM		1990 12 24.58472	08 48 04.18	+23 42 23.3				15.5		399
1990 YM		1990 12 24.66944	08 48 04.20	+23 44 22.8						399
1990 YM		1990 12 24.68472	08 48 04.18	+23 44 43.7						399
1990 YM		1991 01 05.52373	08 45 59.93	+28 49 18.9				15		399
1990 YM		1991 01 05.53553	08 45 59.58	+28 49 39.1						399
1990 YQ	*	1990 12 20.61319	07 00 16.09	+20 07 07.7				16.5		399
1990 YQ		1990 12 20.63073	07 00 15.10	+20 07 10.5						399
1990 YQ		1990 12 23.57535	06 57 12.90	+20 09 39.1				16.5		399
1990 YQ		1990 12 23.59635	06 57 11.58	+20 09 39.0						399
1990 YQ		1990 12 23.61806	06 57 10.15	+20 09 41.6						399
1990 YQ		1990 12 25.63958	06 55 00.51	+20 11 33.9				16.5		399
1990 YQ		1990 12 25.65694	06 54 59.33	+20 11 33.7						399
1990 YS	*	1990 12 20.61319	07 02 35.59	+17 41 41.2				16		399
1990 YS		1990 12 20.63073	07 02 34.55	+17 41 36.7						399
1990 YS		1990 12 25.68194	06 57 36.14	+17 16 53.5				16.5		399
1990 YS		1990 12 25.69549	06 57 35.21	+17 16 46.8						399
1990 YS		1990 12 25.72297	06 57 33.56	+17 16 40.9						399
1990 YS		1990 12 25.73750	06 57 32.54	+17 16 35.0						399
1990 YT	*	1990 12 20.61319	07 05 07.05	+19 25 21.6				17		399
1990 YT		1990 12 20.63073	07 05 06.12	+19 25 21.7						399
1990 YT		1990 12 23.57535	07 02 14.58	+19 27 17.9				17		399
1990 YT		1990 12 23.61806	07 02 11.91	+19 27 20.4						399
1990 YT		1990 12 25.63958	07 00 08.84	+19 28 49.1				16.5		399
1990 YT		1990 12 25.65694	07 00 07.73	+19 28 49.4						399
1991 AE	*	1991 01 09.61788	08 45 02.23	+17 07 04.8				16.5		399
1991 AE		1991 01 09.63681	08 45 01.29	+17 07 14.0						399
1991 AE		1991 01 09.65162	08 45 00.38	+17 07 17.9						399
1057		1990 12 23.58547	08 07 20.73	+17 27 55.6				15		399
1057		1990 12 23.60660	08 07 19.64	+17 27 55.6						399

400 Kitami
K. Watanabe, 3-8 Mason Hashimoto B-203, atsubetsu cyuo 3 jo 4 chome, Atsubetsu-ku, Sapporo 004, Japan
Observers K. Endate, T. Fujii, A. Takahashi, T. Furuta
Measurers K. Watanabe, H. Kaneda
0.20-m f/4.0 reflector, 0.25-m f/3.5 reflector
AGK3, SAOC

1976 GR2		1990 11 24.51493	03 55 44.82	+14 43 48.3				16.5		400
1976 GR2		1990 11 24.53021	03 55 43.54	+14 43 43.4						400
1979 QC2		1990 11 11.58646	03 59 49.71	+16 51 51.4				16.5		400
1979 QC2		1990 11 11.60243	03 59 49.03	+16 51 50.5						400
1979 QC2		1990 11 13.57326	03 58 10.53	+16 46 00.0				16.5		400
1979 QC2		1990 11 13.58924	03 58 09.62	+16 45 52.7						400

1980	RJ		1990	08	30.62257	23	12	52.52	-08	09	23.1	16.0	400
1980	RJ		1990	08	30.63924	23	12	51.33	-08	09	25.2		400
1982	HB2		1991	01	05.41597	05	50	08.92	+30	01	27.1	16.5	400
1982	HB2		1991	01	05.43681	05	50	07.53	+30	01	26.6		400
1982	HB2		1991	01	06.43056	05	48	58.39	+30	01	44.1	17	400
1982	HB2		1991	01	06.45139	05	48	56.82	+30	01	45.8		400
1983	AD		1990	11	24.59375	05	06	42.97	+22	30	04.4	16.5	400
1983	AD		1990	11	24.61458	05	06	41.85	+22	30	07.8		400
1983	TN1		1990	11	24.59375	05	07	57.70	+21	35	02.3	16	400
1983	TN1		1990	11	24.61458	05	07	56.48	+21	34	58.6		400
1988	DO1		1988	03	10.60451	11	15	09.87	+13	44	56.9	16	400
1988	DO1		1988	03	10.62188	11	15	09.08	+13	45	02.0		400
1988	DO1		1988	03	10.63299	11	15	08.28	+13	45	12.3		400
1988	EY2		1988	02	21.60104	11	26	54.92	+10	39	50.2	16.5	400
1988	EY2		1988	02	21.61840	11	26	54.14	+10	40	01.3		400
1988	EY2		1988	02	21.63576	11	26	53.16	+10	40	08.2		400
1988	EY2	*	1988	03	10.60451	11	09	44.93	+13	12	45.1	16.5	400
1988	EY2		1988	03	10.62188	11	09	43.93	+13	12	53.0		400
1988	EY2		1988	03	10.63299	11	09	43.28	+13	13	00.1		400
1989	QE		1990	11	13.63125	04	57	07.72	+39	31	39.5	16.5	400
1989	QE		1990	11	13.64653	04	57	06.93	+39	31	39.8		400
1989	QE		1990	12	15.52049	04	25	47.51	+38	47	31.8	16.5	400
1989	QE		1990	12	15.53785	04	25	46.52	+38	47	27.9		400
1989	RB2		1990	11	21.51806	03	47	54.96	+27	46	00.9	16.5	400
1989	RB2		1990	11	21.53889	03	47	53.61	+27	45	56.9		400
1990	TB1		1990	11	21.43889	01	01	50.06	+14	39	18.3	17	400
1990	TB1		1990	11	21.47014	01	01	49.51	+14	39	13.1		400
1990	TV13		1990	10	24.69896	02	19	08.43	+16	20	02.9	16.0	400
1990	TV13		1990	10	24.71701	02	19	06.98	+16	20	03.0		400
1990	TV13		1990	10	24.72917	02	19	06.42	+16	20	01.3		400
1990	UY3		1990	11	13.50313	02	48	26.18	+09	42	10.0	16.0	400
1990	UY3		1990	11	13.51840	02	48	25.37	+09	42	09.4		400
1990	VT1		1990	12	08.46146	03	22	08.87	+15	47	36.0	16.0	400
1990	VT1		1990	12	08.47743	03	22	08.22	+15	47	36.0		400
1990	VU1		1990	12	15.49132	03	41	45.87	+15	06	48.4	16.5	400
1990	VU1		1990	12	15.50868	03	41	45.47	+15	06	49.0		400
1990	VG2		1990	12	11.48785	03	24	25.51	+13	39	31.1	16.5	400
1990	VG2		1990	12	11.50451	03	24	24.81	+13	39	30.6		400
1990	VX2		1990	11	21.48681	04	05	13.21	+29	35	53.3	15.5	400
1990	VX2		1990	11	21.50069	04	05	11.67	+29	36	12.7		400
1990	VX2		1990	12	13.58125	03	26	14.69	+36	40	51.9	15	400
1990	VX2		1990	12	13.59583	03	26	13.36	+36	41	05.3		400
1990	VF3		1990	12	08.48958	03	37	56.65	+14	10	50.8	16.5	400
1990	VF3		1990	12	08.50382	03	37	55.95	+14	10	54.4		400
1990	VN3		1990	11	21.51806	03	45	01.99	+28	14	52.5	16.5	400
1990	VN3		1990	11	21.53889	03	45	00.41	+28	14	49.1		400
1990	VN3		1990	12	13.54792	03	20	23.58	+27	04	15.8	17	400
1990	VN3		1990	12	13.56736	03	20	22.59	+27	04	10.5		400
1990	VP3		1990	12	15.58889	04	26	56.70	+34	45	29.2	16.5	400
1990	VP3		1990	12	15.61111	04	26	55.05	+34	45	24.2		400
1990	VP3		1990	12	20.55382	04	21	16.27	+34	22	56.7	16.5	400
1990	VP3		1990	12	20.57500	04	21	14.73	+34	22	48.4		400
1990	VD4		1990	12	11.51771	04	02	09.40	+17	15	43.4	16.5	400
1990	VD4		1990	12	11.53299	04	02	08.38	+17	15	40.9		400
1990	VA7		1990	12	13.54792	03	18	07.66	+26	30	08.5	16.5	400
1990	VA7		1990	12	13.56736	03	18	06.71	+26	30	10.7		400
1990	WQ2		1990	12	08.55104	04	23	55.16	+14	39	35.2	16.0	400
1990	WQ2		1990	12	08.56632	04	23	54.56	+14	39	33.9		400

1990	WQ2		1990	12	13.53993	04	19	41.82	+14	17	47.3	16.5	400
1990	WQ2		1990	12	13.55521	04	19	40.88	+14	17	47.7		400
1990	WR2		1990	12	20.50469	04	32	50.77	+17	11	59.9	16.5	400
1990	WR2		1990	12	20.53542	04	32	49.25	+17	12	14.4		400
1990	WS2		1990	12	13.60000	04	43	12.38	+17	10	07.7	16.0	400
1990	WS2		1990	12	13.61806	04	43	11.36	+17	10	05.5		400
1990	WS2		1990	12	20.50469	04	37	00.51	+17	08	11.8	16.5	400
1990	WS2		1990	12	20.53542	04	36	58.96	+17	08	12.6		400
1990	WB3		1990	11	11.58646	04	01	37.69	+17	52	29.0	16.5	400
1990	WB3		1990	11	11.60243	04	01	37.07	+17	52	30.3		400
1990	WB3		1990	11	13.57326	03	59	47.00	+17	51	18.7	16.5	400
1990	WB3		1990	11	13.58924	03	59	46.11	+17	51	17.3		400
1990	WB3		1990	11	21.49965	03	52	05.48	+17	46	27.8	16.0	400
1990	WB3		1990	11	21.51701	03	52	04.32	+17	46	29.2		400
1990	WB3	*	1990	11	24.51493	03	49	07.00	+17	44	36.3	16.0	400
1990	WB3		1990	11	24.53021	03	49	05.74	+17	44	37.8		400
1990	WB3		1990	12	08.48958	03	36	15.20	+17	38	52.5	16.5	400
1990	WB3		1990	12	08.50382	03	36	14.35	+17	38	53.1		400
1990	WX3	*	1990	11	21.57049	04	49	09.30	+15	20	44.2	16.0	400
1990	WX3		1990	11	21.58785	04	49	08.32	+15	20	48.5		400
1990	WX3		1990	11	24.61215	04	45	59.41	+15	29	12.5	16.0	400
1990	WX3		1990	11	24.62743	04	45	58.60	+15	29	12.3		400
1990	WX3		1990	12	13.56979	04	25	11.54	+16	37	22.4	16.0	400
1990	WX3		1990	12	13.58507	04	25	10.51	+16	37	28.1		400
1990	WY3	*	1990	11	21.60104	05	07	10.96	+14	09	12.5	16.0	400
1990	WY3		1990	11	24.64132	05	04	15.07	+14	12	28.2	16.0	400
1990	WY3		1990	11	24.65729	05	04	14.28	+14	12	28.4		400
1990	WY3		1990	12	13.60000	04	43	56.84	+14	49	02.1	16.5	400
1990	WY3		1990	12	13.61806	04	43	55.67	+14	49	08.4		400
1990	XM	*	1990	12	08.55104	04	23	57.68	+18	20	23.1	16.0	400
1990	XM		1990	12	08.56632	04	23	56.76	+18	20	23.7		400
1990	XM		1990	12	13.53993	04	18	46.62	+18	18	13.2	16.0	400
1990	XM		1990	12	13.55521	04	18	45.65	+18	18	12.2		400
1990	XM		1990	12	16.52257	04	15	58.01	+18	17	49.2	16.0	400
1990	XM		1990	12	16.53785	04	15	57.02	+18	17	49.5		400
1990	XM		1990	12	20.47361	04	12	38.76	+18	18	19.9	16	400
1990	XM		1990	12	20.49097	04	12	38.00	+18	18	21.1		400
1990	XN		1990	11	24.58090	04	39	31.04	+18	11	29.9	16.5	400
1990	XN		1990	11	24.59757	04	39	29.52	+18	11	27.9		400
1990	XN	*	1990	12	08.55104	04	24	38.51	+18	34	54.5	16.0	400
1990	XN		1990	12	08.56632	04	24	37.52	+18	34	56.9		400
1990	XN		1990	12	16.52257	04	16	36.08	+18	51	17.9	16.0	400
1990	XN		1990	12	16.53785	04	16	35.19	+18	51	23.4		400
1990	XN		1990	12	20.47361	04	13	04.41	+19	00	27.4	16	400
1990	XN		1990	12	20.49097	04	13	03.59	+19	00	30.0		400
1990	XV	*	1990	12	15.56806	07	41	56.64	+26	08	28.6	16.5	400
1990	XV		1990	12	15.58750	07	41	55.74	+26	08	25.2		400
1990	XV		1990	12	16.58542	07	41	05.45	+26	05	47.2	16.5	400
1990	XV		1990	12	16.60486	07	41	04.51	+26	05	45.5		400
1990	XC1	*	1990	12	15.67639	08	17	29.90	+21	20	03.9	17	400
1990	XC1		1990	12	15.69722	08	17	29.25	+21	20	03.2		400
1990	XC1		1990	12	25.61667	08	11	14.26	+21	10	58.8	16.5	400
1990	XC1		1990	12	25.63958	08	11	13.09	+21	10	58.0		400
1991	AA	*	1991	01	05.41597	05	48	54.68	+30	00	35.6	17	400
1991	AA		1991	01	05.43681	05	48	53.69	+30	00	34.4		400
1991	AA		1991	01	06.43056	05	48	03.77	+30	00	14.5	17	400
1991	AA		1991	01	06.45139	05	48	02.81	+30	00	15.6		400
1991	AE		1991	01	05.49896	08	47	59.47	+16	40	33.5	16.5	400
1991	AE		1991	01	05.51771	08	47	58.62	+16	40	40.4		400

834		1990	12	11.48785	03	24	03.28	+14 08 45.6	14.5	400
834		1990	12	11.50451	03	24	02.69	+14 08 44.4		400
1142		1990	12	11.51771	03	58	53.21	+17 42 40.5	15.5	400
1142		1990	12	11.53299	03	58	52.63	+17 42 38.4		400
2298		1990	12	08.55104	04	23	33.68	+14 26 38.9	16.0	400
2298		1990	12	08.56632	04	23	32.80	+14 26 37.4		400
2298		1990	12	13.53993	04	18	46.54	+14 12 36.0	16.0	400
2298		1990	12	13.55521	04	18	45.44	+14 12 34.0		400
2357		1990	11	11.58646	04	01	56.63	+17 46 36.6	16.0	400
2357		1990	11	11.60243	04	01	56.30	+17 46 35.7		400
2357		1990	11	13.57326	04	00	54.61	+17 43 05.7	16.5	400
2357		1990	11	13.58924	04	00	54.14	+17 43 04.3		400
4592		1990	09	16.57500	23	02	04.88	-06 57 24.0	16.0	400
4592		1990	09	16.59236	23	02	04.14	-06 57 24.2		400
4622		1990	09	16.57500	22	58	31.58	-06 23 18.9	16.5	400
4622		1990	09	16.59236	22	58	30.77	-06 23 22.1		400
4637		1987	11	20.45903	01	13	31.04	+10 03 50.5	17	400
4637		1987	11	20.47778	01	13	30.47	+10 03 47.1		400
4637		1987	11	22.45590	01	12	35.50	+09 56 28.1	17	400
4637		1987	11	22.47431	01	12	35.08	+09 56 23.1		400

402 Dynic Astronomical Observatory
A. Sugie, Dynic Astronomical Observatory, Taga 270, Taga-Cho, Inukami-Gun, Shiga-Ken, 522-03, Japan
Observer A. Sugie
Measurer A. Sugie
0.60-m f/5.0 reflector
AGK3

1987	EH		1990	11	13.60000	02	32	24.26	+02 10 57.0	16.5	402
1987	EH		1990	11	13.61389	02	32	23.71	+02 10 54.7		402
1988	DR		1990	10	20.61042	02	56	17.45	+06 49 55.1	17.0	402
1988	DR		1990	10	20.62778	02	56	16.66	+06 49 43.8		402
1988	DR		1990	10	21.56319	02	55	36.68	+06 40 21.6		402
1988	DR		1990	10	21.58125	02	55	35.85	+06 40 12.5		402
1990	UY		1990	11	13.60000	02	42	08.40	+01 13 41.7	16.0	402
1990	UY		1990	11	13.61389	02	42	07.86	+01 13 37.8		402
1990	VD8		1990	11	24.60833	02	21	40.61	+20 02 03.3	17.5	402
1990	VD8		1990	11	24.62500	02	21	40.15	+20 02 00.7		402
1990	YN	*	1990	12	19.63750	07	39	08.34	+17 36 48.8	17.0	402
1990	YN		1990	12	19.65347	07	39	07.57	+17 36 49.6		402
1990	YN		1990	12	21.64167	07	37	33.41	+17 32 28.6		402
1990	YN		1990	12	21.65694	07	37	32.73	+17 32 27.0		402
1990	YO	*	1990	12	19.73079	08	31	44.04	+36 07 04.9	17.0	402
1990	YO		1990	12	19.75081	08	31	43.40	+36 07 13.2		402
1990	YO		1990	12	21.75417	08	29	21.44	+36 29 26.5		402
1990	YO		1990	12	21.77575	08	29	20.31	+36 29 39.6		402
2098	P-L		1990	10	28.70208	03	12	55.60	+06 20 09.5	16.5	402
2098	P-L		1990	10	28.71597	03	12	54.82	+06 20 04.4		402

403 Kani
T. Furuta, Mitsuike 17-2, Kakiya-Cho, Tokai, Aichi-Ken 477, Japan
Observers Y. Mizuno, T. Furuta
Measurer T. Furuta
0.25-m f/4.2 Wright-Schmidt camera
AGK3

1978	SP6		1990	12	19.58958	07	10	45.5	+24 25 33	16.0	403
1978	SP6		1990	12	19.60035	07	10	44.7	+24 25 33		403
1983	AD		1990	11	23.56597	05	07	42.4	+22 26 33	16.5	403
1983	AD		1990	11	23.57882	05	07	41.9	+22 26 36		403

1986	RW2		1990	11	22.59479	05	04	48.28	+24 21 01.4	16.5	403
1986	RW2		1990	11	22.60556	05	04	47.67	+24 20 59.4		403
1986	RW2		1990	11	23.53958	05	03	48.0	+24 20 41		403
1986	RW2		1990	11	23.55243	05	03	47.5	+24 20 39		403
1990	EL7		1990	02	24.62257	10	44	52.3	+05 37 53		403
1990	VB2		1990	11	22.51875	02	54	44.18	+11 55 55.1		403
1990	VB2		1990	11	22.52951	02	54	43.54	+11 55 45.1		403
1990	WB4	*	1990	11	16.57188	04	03	25.80	+28 05 54.2	16.5	403
1990	WB4		1990	11	16.58264	04	03	25.12	+28 05 52.4		403
1990	XB	*	1990	12	08.56840	05	13	25.73	+25 37 24.8	16.0	403
1990	XB		1990	12	08.57917	05	13	25.05	+25 37 25.0		403
1990	XB		1990	12	10.56806	05	11	27.51	+25 42 18.7		403
1990	XB		1990	12	10.57882	05	11	26.79	+25 42 21.8		403
1990	XB		1990	12	16.54965	05	05	32.42	+25 55 58.5	16.0	403
1990	XB		1990	12	16.55972	05	05	31.78	+25 55 58.9		403
1990	XE		1990	12	12.58750	06	08	46.94	+19 06 12.4	15.5	403
1990	XE		1990	12	12.59826	06	08	46.26	+19 06 10.2		403
1990	XE		1990	12	13.55799	06	07	47.06	+19 02 50.9		403
1990	XF		1990	12	19.58958	06	54	13.62	+28 48 32.8	15.0	403
1990	XF		1990	12	19.62257	06	54	11.70	+28 48 25.1		403
1990	XG	*	1990	12	10.61736	05	57	03.3	+20 23 55	16.0	403
1990	XG		1990	12	10.62882	05	57	02.8	+20 23 58		403
1990	XG		1990	12	12.54045	05	55	24.52	+20 23 58.7		403
1990	XG		1990	12	12.55139	05	55	23.94	+20 23 58.4		403
1990	XT	*	1990	12	12.56458	06	04	28.43	+25 22 27.4	16.5	403
1990	XT		1990	12	12.57535	06	04	27.65	+25 22 30.9		403
1990	XT		1990	12	16.57188	06	00	32.4	+25 24 00	16.0	403
1990	XT		1990	12	16.58264	06	00	31.74	+25 23 58.5		403
1990	XY		1990	12	19.53854	06	45	23.39	+24 41 31.1	16.0	403
1990	XY		1990	12	19.54931	06	45	22.67	+24 41 28.6		403
1990	YF		1990	12	19.61181	07	09	48.73	+20 38 29.3	16.0	403
1990	YF		1990	12	19.62257	07	09	48.26	+20 38 24.9		403
1309	T-2		1990	11	23.59444	05	15	51.44	+24 02 05.1	16.5	403
1309	T-2		1990	11	23.60868	05	15	50.65	+24 02 04.3		403
1309	T-2		1990	12	07.52222	05	03	40.95	+24 00 14.0	16.0	403
1309	T-2		1990	12	07.53299	05	03	40.2	+24 00 15		403
1456			1990	12	19.53854	06	45	27.29	+25 06 28.1		403
1456			1990	12	19.54931	06	45	26.48	+25 06 28.2		403
1703			1990	12	19.61181	07	10	54.3	+20 45 28	15.5	403
4661			1990	12	07.51042	05	09	12.0	+19 08 42	16.0	403

410 Sengamine
T. Nomura, 1-1-8, Yamate, Tarumi-ku, Kobe 655, Japan
Observers K. Ito, T. Nomura
Measurer T. Nomura
0.20-m f/6.0 reflector
Long. and Parallax 134.89, -349, -244 (see MPC 16637)
AGK3

1990	UQ2		1990	11	24.49097	03	12	00.20	+21 51 18.0	16.0	410

411 Oizumi
T. Kobayashi, 1717-2 Shimo-Koizumi, Oizumi-machi, Ora-gun,
Gunma-ken, 370-05 Japan
Observer T. Kobayashi
Measurer T. Kobayashi
0.16-m f/4.8 reflector
AGK3, SAOC

1991	AO	*	1991	01	10.84212	11	41	02.84	+02 02 35.3		411
1991	AO		1991	01	12.85324	11	41	35.95	+01 58 36.5		411

413 Siding Spring
R. H. McNaught, Siding Spring Observatory, Coonabarabran, N.S.W. 2357, Australia
Observers M. Hartley, S. M. Hughes, P. McKenzie, R. H. McNaught, D. Olsson-Steel, Q. A. Parker
Measurer R. H. McNaught
1.2-m U.K. Schmidt, Uppsala Southern Schmidt

1976	MO	*	1976	06	30.59281	19	22	42.57	-21	05	33.7	18.5V	413
1976	MO		1976	06	30.62753	19	22	41.10	-21	05	37.1		413
1976	MP	*	1976	06	30.59281	19	24	39.69	-21	03	38.1	17 V	413
1976	MP		1976	06	30.62753	19	24	37.96	-21	03	45.9		413
1980	WF		1990	12	26.67199	04	58	27.18	-08	08	49.0	15 V E	413
1980	WF		1990	12	26.68218	04	58	30.48	-08	09	16.7		413
1980	WF		1990	12	27.70613	05	04	13.78	-08	54	59.8		413
1980	WF		1990	12	27.71134	05	04	15.48	-08	55	12.9		413
1980	WF		1991	01	06.52708	05	58	17.40	-14	24	07.4		413
1980	WF		1991	01	07.51318	06	03	25.13	-14	45	22.6		413
1981	EF26		1983	10	08.42564	21	05	19.64	-12	53	16.3	17.5V	413
1984	OM	*	1984	07	18.36068	15	01	43.02	-05	44	14.1	16 V	413
1984	OM		1984	07	18.40582	15	01	44.64	-05	44	22.9		413
1984	OM		1984	07	18.41678	15	01	45.27	-05	44	24.7		413
1984	OM		1984	07	18.45845	15	01	46.66	-05	44	32.2		413
1984	ON	*	1984	07	18.36068	15	02	58.12	-04	29	13.8	15 V	413
1984	ON		1984	07	18.40582	15	03	00.73	-04	29	04.8		413
1984	ON		1984	07	18.41678	15	03	01.47	-04	29	01.0		413
1984	OO	*	1984	07	18.38325	15	02	20.97	-07	06	36.9	15.5V	413
1984	OO		1984	07	18.43762	15	02	21.61	-07	06	52.5		413
1985	CA2		1990	11	25.66591	01	53	11.06	+02	03	02.9		413
1985	CA2		1990	11	25.67703	01	53	10.62	+02	03	04.2		413
1985	CA2		1990	12	06.46157	01	49	56.56	+02	28	36.8		413
1987	DJ		1990	10	27.72469	03	24	47.92	+07	54	19.1		413
1988	CH2		1990	11	26.65042	02	02	06.22	-00	59	26.2		413
1988	JW		1984	07	18.36068	14	52	00.19	-04	46	02.7	16.5V	413
1988	JW		1984	07	18.40582	14	52	02.96	-04	46	50.5		413
1988	JW		1984	07	18.41678	14	52	03.72	-04	47	02.3	F	413
1988	JW		1984	07	18.45845	14	52	06.23	-04	47	45.4	F	413
1989	AX2		1986	03	20.65995	12	58	50.82	-16	16	41.2	16 V	413
1989	AX2		1987	08	15.60139	22	35	29.87	-01	15	44.3	16 V F	413
1989	AX2		1990	08	27.54184	19	01	37.28	-19	07	56.1	17.5V	413
1990	QJ1		1976	05	21.53448	14	50	58.90	-24	23	07.2	18 V	413
1990	QJ1		1976	06	28.43558	14	29	03.41	-21	32	40.8	18 V	413
1990	SL		1983	10	06.66512	03	30	33.84	-12	51	33.1		413
1990	SL		1983	10	06.70678	03	30	31.75	-12	51	35.8		413
1990	SQ10		1990	10	12.51282	23	31	27.42	+10	51	03.3		413
1990	SQ10		1990	10	12.56838	23	31	25.59	+10	50	27.6		413
1990	SX10		1990	10	12.51282	23	47	09.86	+08	27	32.6	17 V	413
1990	SX10		1990	10	12.56838	23	47	07.20	+08	27	18.4		413
1990	SE11		1990	10	12.51282	23	37	12.46	+09	29	21.9	17 V	413
1990	SE11		1990	10	12.56838	23	37	10.28	+09	29	08.5		413
1990	TR		1990	12	18.49525	02	11	54.18	+27	38	03.1		413
1990	TZ2		1990	11	19.55520	01	33	58.98	-12	02	18.8		413
1990	TO4		1990	10	20.55747	02	39	51.34	+00	46	12.4		413
1990	TO4		1990	10	20.61302	02	39	48.31	+00	46	05.6		413
1990	UC		1990	11	25.67703	01	56	22.37	+00	43	16.8		413
1990	UH1		1990	12	17.58565	02	50	23.30	+07	51	00.0		413
1990	UH2		1990	12	17.57188	02	26	06.22	-03	11	07.0		413
1990	VC1		1976	06	30.61017	19	24	37.85	-21	08	21.9	18 V	413
1990	VC1		1984	07	18.38325	14	59	00.43	-06	17	54.8	18.5V	413
1990	VC1		1984	07	18.43762	14	59	00.75	-06	18	11.4		413

1990	VC1		1990	11	19.55520	01	25	05.34	-11	33	29.6		413
1990	VC1		1990	11	25.64265	01	23	29.62	-10	48	17.2		413
1990	VC1		1990	12	17.51424	01	26	59.85	-06	59	28.4		413
1990	VE1		1977	11	04.47324	23	54	36.63	-20	02	34.2	17 V	413
1990	VE1		1985	07	20.54501	18	27	53.47	-10	09	37.2	15.5V	413
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1990	VE1		1990	11	26.66435	03	07	33.06	-07	22	18.2		413
1990	VE1		1990	12	17.59688	02	56	18.76	-05	35	00.9		413
1990	WA		1990	11	28.68589	06	05	08.00	+26	44	03.8		413
1990	WB		1990	11	25.62083	00	49	15.45	-04	23	21.5		413
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1990	WC		1976	05	27.77018	21	39	42.84	-24	20	34.9	18 V	413
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1990	WC		1990	12	17.49902	01	00	47.98	-00	28	59.1		413
1990	WD		1990	11	25.62083	00	54	16.52	-04	49	47.5		413
1990	WK		1990	11	25.66591	01	44	51.32	+01	42	16.0		413
1990	WK		1990	12	06.46157	01	41	08.20	+02	04	01.5		413
1990	WK		1990	12	17.54271	01	39	38.22	+02	40	02.7		413
1990	WK		1991	01	06.48646	01	42	52.09	+04	14	14.0		413
1990	WL		1990	11	26.65042	01	57	01.37	-02	08	52.7		413
1990	WL		1990	12	06.47627	01	54	03.12	-01	52	58.4		413
1990	WL		1990	12	17.55718	01	53	21.70	-01	14	37.5		413
1990	WL		1991	01	06.50289	01	59	14.42	+00	37	28.3		413
1990	WM		1990	11	26.65042	02	02	48.39	-02	58	27.7	V	413
1990	WR2		1990	12	26.55191	04	28	27.18	+17	55	35.9	16 V F	413
1990	XJ		1990	12	18.46308	02	07	33.09	+23	13	40.6		413
1990	XJ		1990	12	18.46841	02	07	33.39	+23	13	26.6		413
1990	XJ		1991	01	06.51400	02	40	09.04	+10	26	53.8		413
1990	XJ		1991	01	06.51806	02	40	09.44	+10	26	47.3		413
1990	XJ		1991	01	08.49618	02	43	29.29	+09	34	55.0		413
1991	AF	*	1991	01	07.59463	06	22	16.38	+17	38	02.3	16.5V	413
1991	AF		1991	01	08.57604	06	21	15.06	+17	36	23.5		413
1991	AG	*	1991	01	07.59463	06	30	46.67	+13	53	01.1	16.5V	413
1991	AG		1991	01	08.60417	06	29	44.26	+13	55	21.2		413
1991	AH	*	1991	01	08.47035	04	37	11.99	-15	41	13.2	16.5V	413
1991	AH		1991	01	09.46354	04	36	54.06	-15	28	52.5		413
14			1990	11	25.66591	01	47	23.64	+00	40	07.5		413
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16			1990	12	26.55191	04	31	29.72	+17	21	38.2		413
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346			1990	11	25.66591	01	48	30.95	-00	06	23.2		413
346			1990	12	06.46157	01	44	59.56	+00	34	28.0		413
597			1990	09	24.55132	23	45	47.78	-18	01	18.1		413
655			1990	12	26.55191	04	30	15.61	+13	59	21.1		413
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1455			1984	07	18.40582	15	01	49.19	-07	54	18.4		413
1455			1984	07	18.41678	15	01	49.80	-07	54	25.0		413
1455			1984	07	18.45845	15	01	51.66	-07	54	50.3		413
1725			1990	12	26.55191	04	15	15.60	+17	59	21.5		413
1866			1990	12	18.45278	20	08	31.50	-44	17	43.5		413
1973			1984	07	18.38325	14	52	22.90	-05	42	38.9	17 V	413
1973			1984	07	18.43762	14	52	23.74	-05	42	49.4		413
2048			1991	01	08.47035	04	45	46.62	-15	26	47.1		413
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2244			1990	12	26.55191	04	16	59.28	+14	56	05.9		413
2298			1990	12	26.55191	04	08	50.51	+13	50	54.4		413
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2507			1990	12	06.47627	01	55	41.79	-02	49	24.2		413

3805 1987 08 15.60139 22 35 08.11 -01 15 17.2 413
4672 1990 11 25.64265 01 29 06.38 -10 02 07.9 413

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
1988 JA1 1989 12 05.54376 02 54 53.46 -17 04 32.2 17.9 474
1988 JA1 1989 12 05.56355 02 54 52.65 -17 04 25.5 474

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
1990 RF 1990 08 16.04028 23 20 04.34 +01 17 16.1 17.0 511

540 Linz
E. Meyer, F. Marklstr. 1/62, A-4040 Linz, Austria
Observers E. Meyer, H. Raab
0.30-m f/5.2 Schmidt Cassegrain
AGK3
1990 TR 1990 11 10.91319 01 57 22.06 +26 36 16.0 540
1990 TR 1990 11 10.92708 01 57 21.69 +26 36 20.0 540
1990 TR 1990 11 10.94167 01 57 21.20 +26 36 23.7 540
1990 TR 1990 11 10.95486 01 57 20.81 +26 36 27.6 540

553 Chorzow
I. Wlodarczyk, Planetarium and Astronomical Observatory,
PL-41501 Chorzow 1 s.p.10, Poland
Observers I. Wlodarczyk, M. Szczepanski, T. Firszt, M. Greupner,
J. Kuczynski
Measurers I. Wlodarczyk, B. Osiejuk
704 1990 10 10.84375 22 02 17.14 +13 49 58.5 553
704 1990 10 10.86389 22 02 16.90 +13 49 51.2 553
704 1990 10 10.88333 22 02 16.68 +13 49 44.9 553
704 1990 10 13.87240 22 01 49.78 +13 32 35.4 553
704 1990 10 13.90052 22 01 49.59 +13 32 24.4 553
704 1990 10 13.92726 22 01 49.29 +13 32 14.4 553
704 1990 10 15.83542 22 01 39.98 +13 21 30.2 553
704 1990 10 15.84514 22 01 40.00 +13 21 27.3 553
704 1990 10 15.85972 22 01 39.91 +13 21 21.9 553
704 1990 10 16.83317 22 01 37.50 +13 15 54.0 553
704 1990 10 16.85539 22 01 37.42 +13 15 46.7 553
704 1990 10 16.88005 22 01 37.35 +13 15 38.9 553
704 1990 10 16.90748 22 01 37.37 +13 15 29.4 553
704 1990 10 17.83360 22 01 36.54 +13 10 22.3 553
704 1990 10 17.85999 22 01 36.50 +13 10 14.2 553
704 1990 10 17.88638 22 01 36.41 +13 10 04.0 553
704 1990 10 22.82535 22 01 56.54 +12 43 38.3 553
704 1990 10 22.85104 22 01 56.76 +12 43 30.8 553
704 1990 10 22.87361 22 01 56.92 +12 43 23.6 553

567 Osservatorio Chaonis
J. M. Baur, Via Zara 20, I-33083 Chions, Italy
Observers J. M. Baur, G. Carniel
Measurer J. M. Baur
0.6-m f/3 Wright-Schmidt reflector

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1990 VC    1990 11 12.88472  01 56 05.48  +16 19 09.9            18.5    567
1990 VC    1990 11 12.90555  01 56 04.60  +16 18 58.7                    567
1990 VC    1990 11 13.87083  01 55 22.92  +16 09 38.4                    567
1990 VC    1990 11 13.89167  01 55 21.97  +16 09 25.8                    567
1990 VC    1990 12 06.78889  01 44 47.50  +13 00 50.9                    567
1990 VC    1990 12 06.80972  01 44 47.17  +13 00 43.7                    567
1990 VC    1990 12 06.82639  01 44 47.00  +13 00 37.2                    567
1990 VC    1990 12 11.76250  01 44 11.76  +12 31 18.3                    567
1990 VC    1990 12 11.78333  01 44 11.68  +12 31 11.7                    567
1990 VC    1990 12 11.80417  01 44 11.60  +12 31 05.1                    567
1990 VC    1990 12 15.75278  01 44 10.57  +12 11 02.6                    567
1990 VC    1990 12 15.77361  01 44 10.54  +12 10 56.8                    567
1990 VC    1990 12 15.79444  01 44 10.51  +12 10 50.9                    567
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568 Mauna Kea Observatory
D. J. Tholen, Institute for Astronomy, 2680 Woodlawn Drive,
Honolulu, HI 96822, U.S.A.
Observers D. J. Tholen, W. K. Hartmann, C. Kaminski
IRTF encoders
SAOC

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1927 TC    1990 12 12.38067  00 39 01.75  +21 24 43.8                    568
1990 SQ    1990 12 11.26753  22 22 27.14  +40 01 53.3                    568
1990 SQ    1990 12 12.28542  22 25 30.30  +40 41 59.7            13.0V   568
 449       1990 12 11.63194  13 08 34.53  -04 20 08.1                    568
 944       1990 12 12.37813  00 01 33.60  +11 14 21.3                    568
 951       1990 12 11.64115  14 23 01.53  -16 45 52.8                    568
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573 Eldagsen
W. Bonk, Nordstrasse 33, W-3257 Springe 3, Federal Republic of Germany
AGK3

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  33       1990 12 05.72477  03 09 33.87  +20 17 11.9                    573
  33       1990 12 05.73588  03 09 33.42  +20 17 10.2                    573
  80       1990 12 07.76955  02 33 06.17  +10 04 54.7                    573
  80       1990 12 07.77338  02 33 06.11  +10 04 53.6                    573
 376       1990 10 12.78414  00 46 00.35  +14 37 26.8                    573
 376       1990 10 12.79120  00 45 59.92  +14 37 24.3                    573
 678       1990 10 11.89838  00 37 19.68  +16 47 27.2                    573
 678       1990 10 11.91209  00 37 18.98  +16 47 22.4                    573
1098       1990 10 13.79034  00 51 31.14  +25 08 09.7                    573
1098       1990 10 13.79751  00 51 30.67  +25 08 09.1                    573
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587 Sormano
P. Sicoli, Via Valli 9, I-22040 Garbagnate Monastero (Como), Italy
Observer E. Colzani
Measurer P. Sicoli
0.5-m f/8 reflector
SAOC

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  35       1990 04 27.87452  12 37 25.53  -11 20 21.0                    587
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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, AGK3

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1990 SQ    1990 11 07.83963  21 23 06.79  +15 26 14.5                    589
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1990	SQ	1990	11	09.83547	21	24	44.35	+17	02	00.1	589
1990	SQ	1990	11	09.84242	21	24	44.66	+17	02	19.7	589
1990	SQ	1990	11	13.82573	21	28	40.61	+20	10	32.2	589
1990	SQ	1990	11	13.83267	21	28	41.17	+20	10	52.0	589
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1990	TR	1990	11	13.88125	01	56	22.18	+26	49	20.2	589
1990	TR	1990	11	13.90907	01	56	21.42	+26	49	25.6	589
1990	TR	1990	11	13.91602	01	56	21.30	+26	49	27.7	589
1990	TR	1990	11	13.92296	01	56	21.18	+26	49	29.7	589
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4618		1990	11	17.79376	02	03	45.47	+35	40	36.3	589
4618		1990	11	17.88889	02	03	40.27	+35	40	19.0	589
4618		1990	11	17.90278	02	03	39.93	+35	40	17.6	589
4674		1990	11	17.91250	03	38	51.30	+16	58	57.8	589
4674		1990	11	17.91944	03	38	50.90	+16	58	49.5	589
4674		1990	11	17.92639	03	38	50.44	+16	58	42.2	589

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

119		1990	11	21.84383	04	36	04.10	+15	33	10.8	591
119		1990	11	21.85124	04	36	03.68	+15	33	08.9	591
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1098	1990 10 21.81397	00 43 23.28	+24 47 58.8			591
1108	1990 10 23.87501	01 28 57.29	+29 57 20.2			591
1108	1990 10 23.89300	01 28 56.33	+29 56 58.2			591

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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

1990 TR	1990 12 07.12611	02 01 50.62	+27 28 40.3			657
1990 TR	1990 12 07.14972	02 01 51.32	+27 28 41.7			657
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51	1990 09 07.21771	20 57 25.68	-08 58 12.7			657
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227	1990 08 28.45701	05 26 27.37	+31 47 27.1			657
291	1990 07 18.30701	20 26 52.36	-17 03 09.3			657
291	1990 07 18.33965	20 26 50.34	-17 03 18.7			657
291	1990 07 19.31118	20 25 51.19	-17 07 14.7			657
291	1990 07 19.35979	20 25 48.05	-17 07 27.1			657
336	1990 09 18.23653	00 37 54.90	+12 15 53.5			657
336	1990 09 18.24903	00 37 54.33	+12 15 49.2			657
336	1990 09 19.28750	00 37 00.85	+12 09 14.6			657
507	1990 09 11.18549	23 52 35.62	+13 19 26.6			657
507	1990 09 11.21778	23 52 34.14	+13 19 24.2			657
507	1990 09 13.17125	23 51 05.79	+13 15 28.0			657
507	1990 09 13.20806	23 51 04.16	+13 15 24.5			657
507	1990 09 13.24278	23 51 02.53	+13 15 19.7			657
507	1990 09 13.25042	23 51 02.20	+13 15 19.1			657
507	1990 09 14.22229	23 50 17.55	+13 13 07.2			657
507	1990 09 14.25632	23 50 16.00	+13 13 02.2			657
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904	1990 09 11.19382	23 21 08.65	+06 48 30.0			657
904	1990 09 11.22333	23 21 07.56	+06 48 14.8			657
944	1990 09 21.28792	01 33 45.45	-03 54 32.2			657
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1366	1990 09 20.26812	01 37 34.12	+07 41 37.0			657
1366	1990 09 20.28479	01 37 33.40	+07 41 36.1			657
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1532	1990 09 14.23062	23 07 35.47	-01 11 03.6			657
1532	1990 09 14.26326	23 07 33.82	-01 11 08.1			657
2241	1990 12 07.12611	02 01 40.46	+26 50 09.2			657
2241	1990 12 07.14972	02 01 40.07	+26 50 04.3			657
2293	1990 08 28.30910	22 07 59.05	-12 12 50.6			657
2326	1990 09 21.46743	06 11 36.71	+07 26 03.3			657
2326	1990 09 21.48687	06 11 38.06	+07 25 57.7			657

3232		1990	09	20.26812	01	32	23.37	+08	46	21.1	657
3232		1990	09	23.31979	01	30	45.21	+08	26	26.0	657
3284		1990	09	21.28792	01	34	11.45	-04	24	09.4	657
3284		1990	09	21.30458	01	34	10.83	-04	24	12.0	657
3298		1990	09	11.20215	23	42	09.69	+03	28	40.7	657
3298		1990	09	11.23028	23	42	08.24	+03	28	36.7	657
3298		1990	09	14.24174	23	39	36.16	+03	15	45.9	657
3298		1990	09	14.27090	23	39	34.70	+03	15	37.9	657
3337		1990	09	20.26812	01	39	00.44	+09	21	00.6	657
3337		1990	09	20.28479	01	39	00.02	+09	20	57.9	657
4017		1990	09	20.26812	01	32	05.24	+07	50	52.0	657
4017		1990	09	20.28479	01	32	04.61	+07	50	54.2	657
4148		1990	09	11.21049	23	04	38.37	-02	23	49.2	657
4148		1990	09	11.23722	23	04	36.61	-02	23	57.5	657
4148		1990	09	14.23062	23	01	33.85	-02	36	49.6	657
4148		1990	09	14.26326	23	01	31.75	-02	36	57.1	657
4222		1990	09	11.20215	23	42	19.05	+02	45	58.0	657
4222		1990	09	11.23028	23	42	17.74	+02	45	45.8	657
4552		1990	08	28.30910	22	05	30.74	-13	22	46.1	657
4552		1990	08	28.33757	22	05	29.01	-13	22	50.1	657
4674		1990	11	20.41979	03	35	55.93	+15	59	59.3	657

675 Palomar
E. Helin, MS 183-501, Jet Propulsion Laboratory, Pasadena, CA 91109, U.S.A. (2)
C. Shoemaker, P.O. Box 984, Flagstaff, AZ 86002, U.S.A. (3)
C. J. van Houten, Sterrewacht Leiden, Postbus 9513, NL-2300 RA Leiden, The Netherlands (4)
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road, Flagstaff, AZ 86001, U.S.A. (6)
9 = 3 + 6
Observers J. A. Brown (3, S), T. Gehrels (4, L), E. Helin (2, S), H. E. Holt (3, S), H. R. Holt (3, S), K. Lawrence (2, S), D. H. Levy (2, S), C. M. Olmstead (3, S), P. Rose (2, S), C. S. Shoemaker (3, S), E. M. Shoemaker (3, S)
Measurers E. Bowell (6), E. Dyer (3), K. A. Lawler (3), K. Lawrence (2), C. M. Olmstead (6), P. Rose (2), C. S. Shoemaker (3), 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

1971	UN	1990	09	17.30556	23	41	35.60	-14	38	01.3	9 675
1971	UN	1990	09	19.33472	23	39	39.29	-14	36	35.3	9 675
1971	UN	1990	09	20.34366	23	38	42.00	-14	35	30.6	9 675
1971	UN	1990	09	20.37373	23	38	40.15	-14	35	29.0	9 675
1973	SO4	1990	09	16.33872	00	11	19.58	+06	26	51.4	17.0 9 675
1973	SO4	1990	09	16.37431	00	11	17.56	+06	26	46.8	9 675
1973	SO4	1990	09	19.40087	00	08	32.06	+06	19	42.5	17.0 9 675
1973	SO4	1990	09	19.42205	00	08	30.85	+06	19	38.5	9 675
1973	UB5	1990	09	14.33976	00	12	02.71	+01	34	51.6	16.8 9 675
1973	UB5	1990	09	14.37673	00	12	01.17	+01	34	40.8	9 675
1973	UB5	1990	09	15.38090	00	11	19.91	+01	30	20.3	16.5 9 675
1973	UB5	1990	09	17.35573	00	09	57.17	+01	21	31.3	16.5 9 675
1973	UB5	1990	09	17.39166	00	09	55.58	+01	21	22.2	9 675
1973	UB5	1990	09	18.30295	00	09	16.93	+01	17	12.6	16.5 9 675
1973	UB5	1990	09	18.33576	00	09	15.49	+01	17	04.6	9 675
1974	FO	1990	09	13.31979	22	29	43.02	-11	31	30.3	16.8 9 675
1974	FO	1990	09	13.35122	22	29	41.30	-11	31	33.2	9 675
1976	SV10	1990	11	12.27100	05	19	12.17	+25	10	42.2	18.2 9 675
1976	SV10	1990	11	12.33237	05	19	09.43	+25	10	38.4	9 675
1976	SV10	1990	11	14.49010	05	17	38.56	+25	09	07.1	17.8 9 675

1976	SV10	1990	11	14.52048	05	17	37.18	+25	09	06.0		9 675
1977	EL5	1990	09	16.32031	23	01	13.02	-00	18	40.7	17.5	9 675
1977	EL5	1990	09	19.26892	22	59	25.44	-00	51	57.6	17.5	9 675
1977	EL5	1990	09	19.29653	22	59	24.28	-00	52	17.0		9 675
1977	EL5	1990	09	20.26991	22	58	49.63	-01	03	13.3	17.5	9 675
1977	EL5	1990	09	20.30463	22	58	48.36	-01	03	36.0		9 675
1977	UP	1990	11	11.37222	04	09	29.42	+26	47	56.9	17.0	9 675
1977	UP	1990	11	12.38368	04	08	21.58	+26	47	11.8	17.0	9 675
1977	UP	1990	11	13.41719	04	07	10.95	+26	46	16.7	16.8	9 675
1978	GJ	1990	09	19.40087	00	19	30.08	+08	06	01.6	17.5	9 675
1978	GJ	1990	09	19.42205	00	19	29.03	+08	05	52.7		9 675
1978	SE1	1990	09	17.30556	00	04	52.82	-15	34	22.6	17.0	9 675
1978	SE1	1990	09	17.33941	00	04	51.06	-15	34	33.4		9 675
1978	SE1	1990	09	20.34366	00	02	22.01	-15	49	24.9		9 675
1978	SE1	1990	09	20.37373	00	02	20.23	-15	49	30.1		9 675
1979	FD3	1990	09	15.38090	00	29	33.56	-01	12	19.1		9 675
1979	MP3	1990	11	12.27100	05	22	54.06	+20	56	36.4	18.5	9 675
1979	MP3	1990	11	12.33237	05	22	51.98	+20	56	25.6		9 675
1979	MP3	1990	11	14.49010	05	21	36.28	+20	49	23.3	18.0	9 675
1979	MP3	1990	11	14.52048	05	21	35.07	+20	49	18.0		9 675
1980	FV2	1990	09	14.33976	23	43	26.42	-02	48	42.8	17.5	9 675
1980	FV2	1990	09	14.37673	23	43	24.15	-02	48	42.4		9 675
1980	PV1	1990	11	13.26250	02	13	09.43	+22	37	04.7	18.2	9 675
1980	PV1	1990	11	13.30052	02	13	07.36	+22	36	53.3		9 675
1980	WF	1990	11	13.26250	02	34	53.90	+23	09	58.3	18	3 675
1980	WF	1990	11	13.30052	02	34	55.61	+23	09	13.0		3 675
1980	WF	1990	11	17.31822	02	39	32.01	+21	36	12.3		3 675
1980	WF	1990	11	17.34947	02	39	33.85	+21	35	23.8		3 675
1981	EF2	1990	09	16.33872	23	57	41.15	+10	02	36.4	17.5	9 675
1981	EF2	1990	09	16.37431	23	57	39.15	+10	02	29.9		9 675
1981	EF2	1990	09	17.34774	23	56	44.33	+09	58	57.5	17.2	9 675
1981	EF2	1990	09	17.38385	23	56	42.21	+09	58	49.0		9 675
1981	EF2	1990	09	18.29497	23	55	50.81	+09	55	19.5	17.8	9 675
1981	EF2	1990	09	18.32760	23	55	48.94	+09	55	11.9		9 675
1981	EF2	1990	09	19.40087	23	54	47.79	+09	50	54.3	17.5	9 675
1981	EF2	1990	09	19.42205	23	54	46.63	+09	50	50.7		9 675
1981	EF2	1990	09	20.38590	23	53	51.65	+09	46	52.5	17.5	9 675
1981	EF2	1990	09	20.42083	23	53	49.61	+09	46	43.9		9 675
1981	EH3	1990	09	17.34774	00	00	28.21	+14	11	20.4	18.2	9 675
1981	EH3	1990	09	17.38385	00	00	26.28	+14	11	10.9		9 675
1981	EH3	1990	09	20.38590	23	57	52.29	+13	56	26.0	17.8	9 675
1981	EH3	1990	09	20.42083	23	57	50.33	+13	56	18.2		9 675
1981	EX41	1990	11	12.27100	04	58	10.82	+21	16	04.0		9 675
1981	EX41	1990	11	12.33237	04	58	08.39	+21	16	00.4		9 675
1981	EX41	1990	11	14.52048	04	56	41.60	+21	12	30.0		9 675
1981	GP	1990	09	19.30417	23	32	46.78	-18	12	06.6		9 675
1981	GP	1990	09	19.33472	23	32	44.24	-18	12	06.7		9 675
1982	OF	1990	11	11.32864	04	14	30.42	+27	37	33.3	17.5	9 675
1982	OF	1990	11	11.37222	04	14	27.50	+27	37	25.8		9 675
1982	OF	1990	11	12.38368	04	13	24.03	+27	34	35.7		9 675
1982	OF	1990	11	13.41719	04	12	17.91	+27	31	32.2		9 675
1982	ST	1990	09	17.34774	23	55	39.06	+13	22	05.2	16.5	9 675
1982	ST	1990	09	17.38385	23	55	35.11	+13	22	33.8		9 675
1982	ST	1990	09	20.38590	23	50	15.55	+13	59	46.0	16.8	9 675
1982	ST	1990	09	20.42083	23	50	11.64	+14	00	13.3		9 675
1982	ST	1990	11	18.12882	23	01	04.10	+19	16	06.0	16.2	2 675
1982	ST	1990	11	18.15330	23	01	04.83	+19	16	11.1		2 675
1982	UU5	1990	09	16.32031	23	05	59.44	+01	49	00.6	17.2	9 675
1982	UU5	1990	09	16.35712	23	05	57.62	+01	48	48.5		9 675

1982	UU5	1990	09	19.26892	23	03	34.34	+01	32	47.0	17.2	9 675
1982	UU5	1990	09	19.29653	23	03	32.97	+01	32	37.4		9 675
1983	AD	1990	11	12.27100	05	16	53.70	+21	47	17.4	16.5	9 675
1983	AD	1990	11	12.33237	05	16	51.22	+21	47	31.1		9 675
1983	PZ	1990	09	16.33872	00	08	37.33	+06	35	22.7	16.2	9 675
1983	PZ	1990	09	16.37431	00	08	35.63	+06	35	04.5		9 675
1983	PZ	1990	09	19.40087	00	06	18.29	+06	08	43.1	16.2	9 675
1983	PZ	1990	09	19.42205	00	06	17.26	+06	08	31.0		9 675
1983	TU	1990	11	11.32864	04	25	06.97	+24	46	57.8	16.8	9 675
1983	TU	1990	11	11.37222	04	25	03.75	+24	47	01.1		9 675
1983	TU	1990	11	12.38368	04	23	55.98	+24	48	37.9	16.8	9 675
1983	TU	1990	11	13.41719	04	22	45.30	+24	50	09.4	16.5	9 675
1983	TN1	1990	11	12.27100	05	18	35.89	+22	12	54.9	16.8	9 675
1983	TN1	1990	11	12.33237	05	18	33.28	+22	12	46.1		9 675
1983	TN1	1990	11	14.49010	05	17	00.37	+22	06	40.4	17.2	9 675
1983	TN1	1990	11	14.52048	05	16	58.91	+22	06	35.0		9 675
1985	PM	1990	11	11.27899	02	26	47.81	+23	35	04.8	17.5	9 675
1985	PM	1990	11	11.31111	02	26	45.93	+23	34	56.3		9 675
1985	PM	1990	11	13.26250	02	24	56.82	+23	26	01.2	17.5	9 675
1985	PM	1990	11	13.30052	02	24	54.54	+23	25	50.5		9 675
1985	RC4	1990	09	14.33976	23	50	08.62	-03	42	48.4	17.2	9 675
1985	RC4	1990	09	14.37673	23	50	06.88	-03	43	00.7		9 675
1985	RC4	1990	09	18.30295	23	47	07.87	-04	06	01.3	16.8	9 675
1985	RC4	1990	09	18.33576	23	47	06.34	-04	06	13.4		9 675
1985	TH1	1990	11	14.49010	05	29	10.12	+20	37	07.5	17.5	9 675
1985	TH1	1990	11	14.52048	05	29	08.99	+20	37	04.2		9 675
1986	PE	1990	11	11.32864	04	10	33.51	+25	16	44.8	17.2	9 675
1986	PE	1990	11	11.37222	04	10	30.66	+25	16	26.7		9 675
1986	PE	1990	11	12.38368	04	09	29.21	+25	09	46.5	17.5	9 675
1986	PE	1990	11	18.29844	04	03	11.97	+24	27	43.8	16.0	2 675
1986	PE	1990	11	18.32552	04	03	10.17	+24	27	31.9		2 675
1986	PE	1990	12	15.25174	03	36	43.79	+20	55	07.7	16.5	2 675
1986	PE	1990	12	15.28108	03	36	42.46	+20	54	56.8		2 675
1986	PE	1990	12	18.19965	03	34	46.51	+20	34	07.7		2 675
1986	PE	1990	12	18.22014	03	34	45.73	+20	33	59.6		2 675
1986	QO	1990	09	15.38090	00	18	29.96	+05	34	04.8	17.0	9 675
1986	QO	1990	09	16.33872	00	17	42.52	+05	29	10.8	17.0	9 675
1986	QO	1990	09	16.37431	00	17	40.63	+05	28	59.7		9 675
1986	QO	1990	09	17.35573	00	16	51.45	+05	23	47.8	17.0	9 675
1986	QO	1990	09	17.39166	00	16	49.46	+05	23	35.3		9 675
1986	QO	1990	09	19.40087	00	15	06.42	+05	12	39.1	17.0	9 675
1986	QO	1990	09	19.42205	00	15	05.28	+05	12	32.0		9 675
1986	RW	1990	11	18.24201	01	37	32.73	+26	25	03.3	15.3	2 675
1986	RW	1990	11	18.26997	01	37	31.97	+26	24	49.8		2 675
1986	RW	1990	11	19.20313	01	37	10.35	+26	17	20.2		2 675
1986	RW	1990	12	15.19340	01	40	45.61	+23	21	40.3	16.0	2 675
1986	RW	1990	12	15.21406	01	40	46.23	+23	21	34.6		2 675
1986	RW	1990	12	17.11545	01	42	02.78	+23	13	02.3		2 675
1986	RW	1990	12	17.13993	01	42	03.72	+23	12	50.1		2 675
1986	RO1	1990	11	11.32864	04	37	35.20	+24	46	02.2	17.5	9 675
1986	RO1	1990	11	11.37222	04	37	32.61	+24	45	58.1		9 675
1986	RO1	1990	11	12.38368	04	36	35.02	+24	44	00.8	17.5	9 675
1986	RO1	1990	11	13.41719	04	35	34.46	+24	41	55.0	17.0	9 675
1986	RW2	1990	11	12.27100	05	14	23.27	+24	21	02.3	16.8	9 675
1986	RW2	1990	11	12.33237	05	14	20.21	+24	21	03.4		9 675
1986	RW2	1990	11	14.49010	05	12	34.23	+24	21	36.3	17.0	9 675
1986	RW2	1990	11	14.52048	05	12	32.60	+24	21	35.9		9 675
1986	RH12	1990	09	17.34774	23	44	57.27	+13	01	08.2	15.8	9 675
1986	RH12	1990	09	17.38385	23	44	55.81	+13	00	40.0		9 675

1986	RH12	1990	09	18.29497	23	44	20.52	+12	48	48.8	16.0	9 675
1986	RH12	1990	09	18.32760	23	44	19.14	+12	48	22.7		9 675
1986	XT	1990	11	13.26250	02	38	52.60	+21	15	23.9	17.0	9 675
1986	XT	1990	11	13.30052	02	38	50.43	+21	15	16.6		9 675
1987	DC6	1990	09	14.33976	00	05	23.21	-03	19	39.4	17.2	9 675
1987	DC6	1990	09	14.37673	00	05	21.66	-03	19	53.6		9 675
1987	DC6	1990	09	18.30295	00	02	42.12	-03	46	14.9	17.2	9 675
1987	DC6	1990	09	18.33576	00	02	40.69	-03	46	27.5		9 675
1988	BK	1990	09	17.33941	23	51	05.06	-12	33	44.1	17.8	9 675
1988	BK	1990	09	20.34366	23	48	50.94	-12	53	32.2		9 675
1988	BK	1990	09	20.37373	23	48	49.54	-12	53	44.8		9 675
1988	BE5	1990	09	17.34774	00	04	29.11	+13	09	43.7	18.2	9 675
1988	BE5	1990	09	17.38385	00	04	27.38	+13	09	28.6		9 675
1988	BE5	1990	09	20.38590	00	02	06.30	+12	47	54.6	18.0	9 675
1988	BE5	1990	09	20.42083	00	02	04.63	+12	47	41.2		9 675
1988	CJ	1990	09	15.33698	23	29	19.80	+01	57	13.2	17.2	9 675
1988	CJ	1990	09	15.37274	23	29	18.00	+01	57	02.4		9 675
1988	CJ	1990	09	16.32031	23	28	31.86	+01	52	06.2	17.5	9 675
1988	CJ	1990	09	16.35712	23	28	30.04	+01	51	54.7		9 675
1988	CJ	1990	09	19.26892	23	26	08.94	+01	36	37.1	17.2	9 675
1988	CJ	1990	09	19.29653	23	26	07.59	+01	36	29.4		9 675
1988	CJ	1990	09	20.33669	23	25	17.45	+01	30	57.7	17.5	9 675
1988	CJ	1990	09	20.36742	23	25	15.95	+01	30	47.4		9 675
1988	ED	1990	09	15.33698	23	27	19.09	+02	30	26.9	16.8	9 675
1988	ED	1990	09	15.37274	23	27	16.83	+02	30	23.9		9 675
1988	ED	1990	09	16.32031	23	26	19.83	+02	28	54.8	17.2	9 675
1988	ED	1990	09	16.35712	23	26	17.55	+02	28	51.5		9 675
1988	ED	1990	09	19.26892	23	23	22.78	+02	24	03.4	17.0	9 675
1988	ED	1990	09	19.29653	23	23	21.01	+02	24	02.0		9 675
1988	ED	1990	09	20.33669	23	22	18.85	+02	22	13.4	17.5	9 675
1988	ED	1990	09	20.36742	23	22	16.94	+02	22	09.3		9 675
1988	EM1	1990	09	15.38090	00	31	36.21	+01	08	40.6	18.2	9 675
1988	EM1	1990	09	17.35573	00	30	13.28	+00	52	34.3	17.8	9 675
1988	EM1	1990	09	17.39166	00	30	11.72	+00	52	17.3		9 675
1988	JV	1990	12	14.49097	08	45	16.32	+25	41	40.5	15.0	2 675
1988	JV	1990	12	14.52465	08	45	15.98	+25	41	59.1		2 675
1988	JV	1990	12	17.52326	08	44	41.01	+26	10	45.5		2 675
1988	JV	1990	12	17.54253	08	44	40.70	+26	10	55.5		2 675
1988	PY	1989	11	01.21927	01	07	42.91	+16	39	33.2	17.3	3 675
1988	PY	1989	11	02.24618	01	07	13.33	+16	36	06.6		3 675
1988	PY	1989	11	22.20225	00	59	48.25	+15	32	56.2	17.5	3 675
1988	PY	1989	11	22.23541	00	59	47.79	+15	32	49.6		3 675
1988	PY	1990	10	20.51510	04	35	12.58	+29	52	31.1		3 675
1988	PY	1990	10	22.45763	04	34	36.37	+29	53	07.8	17.9	3 675
1988	PY	1990	11	11.32864	04	25	34.37	+29	46	53.5	18.2	9 675
1988	PY	1990	11	11.37222	04	25	32.70	+29	46	49.5	17.5	9 675
1988	PY	1990	11	12.38368	04	24	58.24	+29	45	53.2	17.5	9 675
1988	PY	1990	11	13.41719	04	24	22.49	+29	44	50.0	17.0	9 675
1988	QE	1990	10	21.36302	02	30	10.94	+18	46	11.9	17.8	3 675
1988	QE	1990	10	23.34063	02	29	10.15	+18	40	00.8		3 675
1988	QE	1990	11	11.27899	02	19	13.68	+17	34	35.2	17.5	9 675
1988	QE	1990	11	11.31111	02	19	12.73	+17	34	27.8		9 675
1988	QE	1990	11	13.26250	02	18	13.65	+17	27	26.7	17.8	9 675
1988	QE	1990	11	13.30052	02	18	12.50	+17	27	17.4		9 675
1988	QF	1988	09	11.22395	22	44	36.88	-15	21	13.8	17.3	3 675
1988	QF	1988	09	13.32188	22	43	06.23	-16	17	36.9		3 675
1988	QF	1988	09	16.25086	22	41	06.61	-17	33	34.4		3 675
1988	RT	1989	11	02.28229	01	15	21.38	+16	55	04.4	17.0	3 675
1988	RT	1989	11	03.28246	01	14	54.13	+16	51	29.9		3 675

1988	RT	1989	11	22.20225	01	07	56.24	+15	47	12.0	17.4 3 675
1988	RT	1989	11	22.23541	01	07	55.74	+15	47	05.9	3 675
1988	RT	1990	10	20.51510	04	12	56.69	+26	46	31.3	17.3 3 675
1988	RT	1990	10	22.45763	04	12	15.25	+26	45	09.7	3 675
1988	RT	1990	11	13.38385	04	01	47.65	+26	16	18.8	17.5 3 675
1988	RT	1990	11	14.39461	04	01	13.63	+26	14	24.8	3 675
1988	RV	1989	09	27.32361	00	10	12.92	+05	21	05.8	3 675
1988	RK1	1989	09	28.46180	02	59	19.61	+12	23	38.0	17.9 3 675
1988	RK1	1989	09	28.50555	02	59	18.87	+12	23	30.9	3 675
1988	RK1	1990	11	12.27100	05	10	58.08	+25	21	40.1	18.0 9 675
1988	RK1	1990	11	12.33237	05	10	56.55	+25	21	43.4	9 675
1988	RK1	1990	11	14.49010	05	09	54.60	+25	23	05.9	17.5 9 675
1988	RK1	1990	11	14.52048	05	09	53.66	+25	23	07.1	9 675
1988	TU2	1990	11	12.27100	05	01	57.03	+23	25	48.7	16.8 9 675
1988	TU2	1990	11	12.33237	05	01	55.20	+23	25	39.3	9 675
1988	TU2	1990	11	14.49010	05	00	50.14	+23	18	26.9	16.8 9 675
1988	TU2	1990	11	14.52048	05	00	49.16	+23	18	20.8	9 675
1989	LM	1990	11	11.32864	04	23	07.19	+27	02	21.2	17.8 9 675
1989	LM	1990	11	11.37222	04	23	04.36	+27	02	12.2	9 675
1989	LM	1990	11	12.38368	04	22	01.14	+26	59	09.5	18.0 9 675
1989	LM	1990	11	13.41719	04	20	55.45	+26	55	56.3	17.8 9 675
1989	LM	1990	12	15.26736	03	46	21.36	+24	27	48.2	17.0 2 675
1989	LM	1990	12	15.29549	03	46	19.94	+24	27	36.6	2 675
1989	LM	1990	12	18.22778	03	43	52.69	+24	12	27.4	2 675
1989	LM	1990	12	18.25417	03	43	51.39	+24	12	18.7	2 675
1989	LU	1990	11	18.46111	06	17	24.50	+25	30	03.6	16.7 2 675
1989	LU	1990	11	18.48715	06	17	23.41	+25	30	03.6	2 675
1989	NM	1990	11	18.45417	05	52	20.76	+18	48	09.8	16.5 2 675
1989	NM	1990	11	18.48056	05	52	19.55	+18	48	12.6	2 675
1989	NM	1990	11	21.32031	05	50	13.86	+18	52	04.9	2 675
1989	NM	1990	11	21.34306	05	50	12.62	+18	52	06.7	2 675
1989	QF	1989	09	27.23715	22	44	21.69	-04	17	30.7	3 675
1990	QY	1990	09	15.31146	22	57	53.55	+00	11	33.9	16.8 9 675
1990	QY	1990	09	15.34701	22	57	52.02	+00	11	16.6	9 675
1990	QY	1990	09	16.32031	22	57	12.50	+00	03	43.3	17.0 9 675
1990	QY	1990	09	16.35712	22	57	10.95	+00	03	25.1	9 675
1990	QY	1990	09	20.26991	22	54	37.06	-00	26	55.1	17.2 9 675
1990	QY	1990	09	20.30463	22	54	35.71	-00	27	10.3	9 675
1990	QA1	1990	09	16.32031	23	02	29.92	+00	14	10.9	17.2 9 675
1990	QA1	1990	09	16.35712	23	02	28.05	+00	13	54.9	9 675
1990	QA1	1990	09	19.26892	23	00	08.90	-00	06	22.4	17.5 9 675
1990	QA1	1990	09	19.29653	23	00	07.45	-00	06	33.9	9 675
1990	QA1	1990	09	20.26991	22	59	22.66	-00	13	19.3	17.2 9 675
1990	QA1	1990	09	20.30463	22	59	21.02	-00	13	33.7	9 675
1990	QE1	1990	09	16.33872	23	53	52.37	+06	23	25.1	16.2 9 675
1990	QE1	1990	09	16.37431	23	53	50.65	+06	23	18.4	9 675
1990	QE1	1990	09	19.40087	23	51	28.11	+06	14	16.1	17.0 9 675
1990	QE1	1990	09	19.42205	23	51	27.09	+06	14	11.9	9 675
1990	QE1	1990	09	20.33669	23	50	43.81	+06	11	18.1	16.5 9 675
1990	QE1	1990	09	20.36742	23	50	42.31	+06	11	12.0	9 675
1990	QG1	1990	09	20.26991	22	52	23.02	-05	52	58.5	17.2 9 675
1990	QG1	1990	09	20.30463	22	52	21.14	-05	52	58.2	9 675
1990	QJ1	1990	09	15.31146	22	59	54.19	-01	50	55.5	16.8 9 675
1990	QJ1	1990	09	15.34701	22	59	52.02	-01	51	00.6	9 675
1990	QJ1	1990	09	20.26991	22	55	14.31	-02	02	30.5	16.5 9 675
1990	QJ1	1990	09	20.30463	22	55	12.30	-02	02	34.8	9 675
1990	QN1	1990	09	15.31146	22	59	32.32	-01	50	30.5	17.2 9 675
1990	QN1	1990	09	15.34701	22	59	30.16	-01	50	39.6	9 675
1990	QN1	1990	09	20.26991	22	54	53.56	-02	10	17.3	17.2 9 675

1990	QN1	1990	09	20.30463	22	54	51.47	-02	10	26.8		9 675
1990	QO1	1990	09	16.32031	23	04	29.87	-02	44	24.7	17.8	9 675
1990	QO1	1990	09	16.35712	23	04	28.17	-02	44	28.8		9 675
1990	QO1	1990	09	20.26991	23	01	17.09	-02	53	35.7	17.5	9 675
1990	QO1	1990	09	20.30463	23	01	15.36	-02	53	39.8		9 675
1990	QQ1	1990	09	16.32031	23	04	42.14	-02	19	51.3	17.2	9 675
1990	QQ1	1990	09	16.35712	23	04	40.09	-02	19	54.0		9 675
1990	QQ1	1990	09	19.26892	23	02	01.00	-02	22	05.4	17.2	9 675
1990	QQ1	1990	09	19.29653	23	01	59.42	-02	22	06.9		9 675
1990	QQ1	1990	09	20.26991	23	01	06.75	-02	22	51.4	17.5	9 675
1990	QQ1	1990	09	20.30463	23	01	04.83	-02	22	52.8		9 675
1990	QA2	1990	09	14.33073	23	16	22.64	-03	18	08.4	17.5	9 675
1990	QA2	1990	09	14.36858	23	16	20.56	-03	18	19.3		9 675
1990	QE2	1990	09	16.32031	23	13	11.25	-02	06	25.0	16.8	9 675
1990	QE2	1990	09	16.35712	23	13	08.89	-02	06	32.2		9 675
1990	QE2	1990	09	19.26892	23	10	13.74	-02	15	16.6	17.2	9 675
1990	QE2	1990	09	19.29653	23	10	12.02	-02	15	19.8		9 675
1990	QM2	1990	09	19.30417	23	26	19.78	-14	38	04.9		9 675
1990	QM2	1990	09	19.33472	23	26	18.46	-14	38	56.0		9 675
1990	QN2	1990	09	16.32031	23	21	24.06	-02	45	11.9	17.0	9 675
1990	QN2	1990	09	16.35712	23	21	21.73	-02	45	14.8		9 675
1990	QN2	1990	09	19.26892	23	18	24.48	-02	48	35.0	17.0	9 675
1990	QN2	1990	09	19.29653	23	18	22.86	-02	48	36.6		9 675
1990	QP2	1990	09	14.33976	23	46	15.29	-01	48	03.3	16.8	9 675
1990	QP2	1990	09	14.37673	23	46	13.48	-01	48	13.2		9 675
1990	QP2	1990	09	18.30295	23	43	03.59	-02	06	11.5	16.8	9 675
1990	QP2	1990	09	18.33576	23	43	02.01	-02	06	21.0		9 675
1990	QR2	1990	09	14.33976	23	49	34.15	+01	35	43.4	16.8	9 675
1990	QR2	1990	09	14.37673	23	49	32.29	+01	35	36.3		9 675
1990	QR2	1990	09	18.30295	23	46	11.31	+01	20	55.2	16.8	9 675
1990	QR2	1990	09	18.33576	23	46	09.65	+01	20	46.0		9 675
1990	QR2	1990	09	20.33669	23	44	26.30	+01	12	59.8		9 675
1990	QR2	1990	09	20.36742	23	44	24.76	+01	12	56.0		9 675
1990	QS2	1990	09	14.33976	23	52	39.78	-03	07	18.2	17.2	9 675
1990	QS2	1990	09	14.37673	23	52	38.08	-03	07	30.1		9 675
1990	QS2	1990	09	18.30295	23	49	40.07	-03	29	56.1	17.0	9 675
1990	QS2	1990	09	18.33576	23	49	38.57	-03	30	08.1		9 675
1990	QT2	1990	09	14.33976	23	57	14.82	-01	13	24.1	17.2	9 675
1990	QT2	1990	09	14.37673	23	57	12.68	-01	13	35.8		9 675
1990	QT2	1990	09	18.30295	23	53	32.76	-01	35	42.2	17.0	9 675
1990	QT2	1990	09	18.33576	23	53	30.80	-01	35	53.3		9 675
1990	QD3	1990	09	16.32031	23	05	05.77	-02	25	14.1	17.2	9 675
1990	QD3	1990	09	16.35712	23	05	03.47	-02	25	14.1		9 675
1990	QD3	1990	09	19.26892	23	02	13.89	-02	23	24.5	17.5	9 675
1990	QD3	1990	09	19.29653	23	02	12.11	-02	23	23.7		9 675
1990	QD3	1990	09	20.26991	23	01	17.27	-02	22	47.9	17.5	9 675
1990	QD3	1990	09	20.30463	23	01	15.21	-02	22	46.2		9 675
1990	QH3	1990	09	16.32031	23	04	00.68	+00	05	13.5	17.0	9 675
1990	QH3	1990	09	16.35712	23	03	57.97	+00	05	30.8		9 675
1990	QH3	1990	09	19.26892	23	00	33.14	+00	28	57.5	17.0	9 675
1990	QH3	1990	09	19.29653	23	00	31.15	+00	29	09.0		9 675
1990	QW3	1990	09	15.31146	22	52	42.73	-05	06	50.8	17.5	9 675
1990	QW3	1990	09	15.34701	22	52	40.89	-05	06	59.3		9 675
1990	QW3	1990	09	20.26991	22	48	29.47	-05	27	50.0	17.5	9 675
1990	QW3	1990	09	20.30463	22	48	27.64	-05	27	58.4		9 675
1990	QX3	1990	09	15.31146	22	56	57.65	-04	18	03.1	17.5	9 675
1990	QX3	1990	09	15.34701	22	56	55.92	-04	18	00.4		9 675
1990	QX3	1990	09	20.26991	22	53	16.59	-04	12	12.0	17.8	9 675
1990	QX3	1990	09	20.30463	22	53	14.97	-04	12	08.9		9 675

1990	RB		1990	09	17.34774	00	05	31.29	+14	55	45.4	16.8	9 675
1990	RB		1990	09	17.38385	00	05	29.43	+14	55	39.0		9 675
1990	RB		1990	09	20.38590	00	03	04.93	+14	47	19.0	17.2	9 675
1990	RB		1990	09	20.42083	00	03	03.11	+14	47	14.3		9 675
1990	RD		1990	09	15.31146	22	57	08.09	-04	18	17.2	17.0	9 675
1990	RD		1990	09	15.34701	22	57	06.60	-04	18	36.1		9 675
1990	RD		1990	09	20.26991	22	53	57.06	-05	02	24.3	16.8	9 675
1990	RD		1990	09	20.30463	22	53	55.69	-05	02	42.2		9 675
1990	RF		1990	09	20.26991	22	59	24.31	-03	46	26.0	16.5	9 675
1990	RF		1990	09	20.30463	22	59	22.98	-03	46	45.3		9 675
1990	RP		1990	09	15.31146	22	43	05.11	-05	43	34.5	17.5	9 675
1990	RP		1990	09	15.34701	22	43	03.47	-05	43	43.7		9 675
1990	RP		1990	09	20.26991	22	39	33.69	-06	05	17.8	17.5	9 675
1990	RP		1990	09	20.30463	22	39	32.16	-06	05	25.5		9 675
1990	RO1		1990	09	14.33976	23	44	57.86	-03	15	32.0	17.2	9 675
1990	RO1		1990	09	14.37673	23	44	56.09	-03	15	46.2		9 675
1990	RP1		1990	09	14.33976	23	46	17.92	-02	01	44.8	17.5	9 675
1990	RP1		1990	09	14.37673	23	46	15.98	-02	01	52.9		9 675
1990	RP1		1990	09	18.30295	23	42	56.24	-02	17	03.3	17.5	9 675
1990	RP1		1990	09	18.33576	23	42	54.61	-02	17	12.3		9 675
1990	RQ1	*	1990	09	14.33976	23	53	12.09	-00	18	36.2	17.5	9 675
1990	RQ1		1990	09	14.37673	23	53	10.12	-00	18	50.0		9 675
1990	RQ1		1990	09	18.30295	23	49	58.88	-00	41	36.3	17.2	9 675
1990	RQ1		1990	09	18.33576	23	49	57.27	-00	41	48.5		9 675
1990	RR1	*	1990	09	14.33976	23	54	40.94	-02	40	03.0	17.8	9 675
1990	RR1		1990	09	14.37673	23	54	39.38	-02	40	27.2		9 675
1990	RR1		1990	09	18.30295	23	51	55.97	-03	25	17.0	17.2	9 675
1990	RR1		1990	09	18.33576	23	51	54.59	-03	25	39.0		9 675
1990	RS1	*	1990	09	14.33976	23	57	41.31	-02	26	24.3	17.0	9 675
1990	RS1		1990	09	14.37673	23	57	39.47	-02	26	30.5		9 675
1990	RS1		1990	09	18.30295	23	54	32.17	-02	37	18.3	16.8	9 675
1990	RS1		1990	09	18.33576	23	54	30.48	-02	37	23.5		9 675
1990	RT1	*	1990	09	15.31146	22	54	24.25	-01	56	32.4	17.5	9 675
1990	RT1		1990	09	15.34701	22	54	22.53	-01	56	41.8		9 675
1990	RT1		1990	09	20.26991	22	50	34.49	-02	19	00.1	17.5	9 675
1990	RT1		1990	09	20.30463	22	50	32.71	-02	19	10.4		9 675
1990	RU1	*	1990	09	15.38090	00	10	09.92	+03	45	08.0	17.5	9 675
1990	RU1		1990	09	16.33872	00	09	16.41	+03	43	23.0	17.2	9 675
1990	RU1		1990	09	16.37431	00	09	14.31	+03	43	18.5		9 675
1990	RU1		1990	09	17.35573	00	08	19.34	+03	41	23.3	17.5	9 675
1990	RU1		1990	09	17.39166	00	08	17.15	+03	41	20.4		9 675
1990	RU1		1990	09	19.40087	00	06	23.02	+03	37	20.3	17.5	9 675
1990	RU1		1990	09	19.42205	00	06	21.86	+03	37	16.8		9 675
1990	RV1	*	1990	09	15.38090	00	15	42.47	+00	27	49.9	17.5	9 675
1990	RV1		1990	09	17.35573	00	14	11.68	+00	19	30.5	17.2	9 675
1990	RV1		1990	09	17.39166	00	14	09.88	+00	19	20.9		9 675
1990	RW1	*	1990	09	15.38090	00	24	34.47	+06	01	33.7	17.0	9 675
1990	RW1		1990	09	17.35573	00	22	53.59	+05	52	09.4	17.0	9 675
1990	RW1		1990	09	17.39166	00	22	51.64	+05	51	58.2		9 675
1990	RX1	*	1990	09	15.38090	00	25	40.18	+02	03	11.8	17.8	9 675
1990	RX1		1990	09	17.35573	00	24	15.17	+01	54	33.0	17.5	9 675
1990	RX1		1990	09	17.39166	00	24	13.51	+01	54	23.7		9 675
1990	RY1	*	1990	09	15.38090	00	31	41.86	-00	01	55.1	17.2	9 675
1990	RY1		1990	09	17.35573	00	29	45.04	-00	10	30.1	17.5	9 675
1990	RY1		1990	09	17.39166	00	29	42.83	-00	10	38.6		9 675
1990	RZ1	*	1990	09	15.38090	00	33	41.86	+04	45	13.8	17.5	9 675
1990	RZ1		1990	09	17.35573	00	32	25.24	+04	38	16.3	17.5	9 675
1990	RZ1		1990	09	17.39166	00	32	23.69	+04	38	08.1		9 675
1990	RA2	*	1990	09	14.33976	00	03	11.43	-00	54	59.5	17.2	9 675

1990	RA2		1990	09	14.37673	00	03	09.42	-00	55	12.3	9 675
1990	RA2		1990	09	18.30295	23	59	47.22	-01	20	08.1	17.2 9 675
1990	RA2		1990	09	18.33576	23	59	45.38	-01	20	21.1	9 675
1990	RB2	*	1990	09	15.38090	00	07	48.40	+03	00	13.4	18.2 9 675
1990	RB2		1990	09	16.33872	00	06	55.05	+02	54	49.2	17.5 9 675
1990	RB2		1990	09	16.37431	00	06	53.01	+02	54	36.7	9 675
1990	RB2		1990	09	18.30295	00	05	04.93	+02	43	29.9	17.8 9 675
1990	RB2		1990	09	18.33576	00	05	03.07	+02	43	19.8	9 675
1990	RB2		1990	09	19.40087	00	04	02.72	+02	37	08.1	17.5 9 675
1990	RB2		1990	09	19.42205	00	04	01.30	+02	36	59.1	9 675
1990	RC2	*	1990	09	14.33976	23	43	29.41	+01	20	28.4	17.5 9 675
1990	RC2		1990	09	14.37673	23	43	27.65	+01	20	13.2	9 675
1990	RC2		1990	09	15.33698	23	42	43.26	+01	13	50.9	17.5 9 675
1990	RC2		1990	09	15.37274	23	42	41.54	+01	13	35.3	9 675
1990	RC2		1990	09	18.30295	23	40	25.02	+00	53	44.0	17.8 9 675
1990	RC2		1990	09	18.33576	23	40	23.47	+00	53	29.9	9 675
1990	RC2		1990	09	20.33669	23	38	49.90	+00	39	48.5	9 675
1990	RC2		1990	09	20.36742	23	38	48.52	+00	39	35.7	9 675
1990	RD2	*	1990	09	14.33976	23	45	07.31	+01	03	18.5	17.2 9 675
1990	RD2		1990	09	14.37673	23	45	05.14	+01	03	14.8	9 675
1990	RD2		1990	09	18.30295	23	41	29.93	+00	56	10.1	17.5 9 675
1990	RD2		1990	09	18.33576	23	41	28.02	+00	56	05.8	9 675
1990	RD2		1990	09	20.33669	23	39	37.15	+00	52	06.2	9 675
1990	RD2		1990	09	20.36742	23	39	35.25	+00	52	01.9	9 675
1990	RE2	*	1990	09	14.33976	23	49	08.81	+01	26	58.8	16.8 9 675
1990	RE2		1990	09	14.37673	23	49	07.06	+01	26	41.9	9 675
1990	RE2		1990	09	15.33698	23	48	23.85	+01	19	39.7	16.5 9 675
1990	RE2		1990	09	15.37274	23	48	22.05	+01	19	23.7	9 675
1990	RE2		1990	09	18.30295	23	46	08.18	+00	57	10.6	17.0 9 675
1990	RE2		1990	09	18.33576	23	46	06.55	+00	56	54.1	9 675
1990	RE2		1990	09	20.33669	23	44	33.33	+00	41	24.6	9 675
1990	RE2		1990	09	20.36742	23	44	31.87	+00	41	12.6	9 675
1990	RF2	*	1990	09	14.33976	23	50	26.50	+01	48	39.8	17.0 9 675
1990	RF2		1990	09	14.37673	23	50	24.39	+01	48	25.1	9 675
1990	RF2		1990	09	15.33698	23	49	31.77	+01	42	17.1	17.2 9 675
1990	RF2		1990	09	15.37274	23	49	29.65	+01	42	03.2	9 675
1990	RF2		1990	09	18.30295	23	46	48.53	+01	22	49.0	16.8 9 675
1990	RF2		1990	09	18.33576	23	46	46.77	+01	22	35.3	9 675
1990	RG2	*	1990	09	14.33976	23	50	41.05	+02	29	43.3	16.8 9 675
1990	RG2		1990	09	14.37673	23	50	39.66	+02	29	22.8	9 675
1990	RG2		1990	09	15.33698	23	50	05.34	+02	20	10.6	16.5 9 675
1990	RG2		1990	09	15.37274	23	50	03.91	+02	19	49.5	9 675
1990	RG2		1990	09	18.30295	23	48	17.98	+01	51	12.3	16.8 9 675
1990	RG2		1990	09	18.33576	23	48	16.83	+01	50	52.2	9 675
1990	RG2		1990	09	20.33669	23	47	03.55	+01	31	01.7	9 675
1990	RG2		1990	09	20.36742	23	47	02.33	+01	30	46.9	9 675
1990	RH2	*	1990	09	14.33976	00	01	40.27	+03	15	01.2	17.5 9 675
1990	RH2		1990	09	14.37673	00	01	38.03	+03	14	57.5	9 675
1990	RH2		1990	09	16.33872	23	59	41.54	+03	12	19.6	17.5 9 675
1990	RH2		1990	09	16.37431	23	59	39.29	+03	12	16.9	9 675
1990	RH2		1990	09	18.30295	23	57	42.64	+03	09	14.6	17.5 9 675
1990	RH2		1990	09	18.33576	23	57	40.69	+03	09	11.7	9 675
1990	RH2		1990	09	19.40087	23	56	35.04	+03	07	27.1	17.8 9 675
1990	RH2		1990	09	19.42205	23	56	33.70	+03	07	24.1	9 675
1990	RJ2	*	1990	09	14.33976	00	09	56.04	+00	33	26.4	17.5 9 675
1990	RJ2		1990	09	14.37673	00	09	54.29	+00	33	07.9	9 675
1990	RJ2		1990	09	15.38090	00	09	10.67	+00	24	30.7	17.5 9 675
1990	RJ2		1990	09	18.30295	00	06	59.42	-00	01	13.2	17.5 9 675
1990	RJ2		1990	09	18.33576	00	06	57.76	-00	01	30.6	9 675

1990	RK2	*	1990	09	14.33976	00	10	30.70	+01	05	37.2	17.2	9 675
1990	RK2		1990	09	14.37673	00	10	28.68	+01	05	19.9		9 675
1990	RK2		1990	09	15.38090	00	09	36.33	+00	57	42.3	17.5	9 675
1990	RK2		1990	09	18.30295	00	07	00.13	+00	35	00.4	17.2	9 675
1990	RK2		1990	09	18.33576	00	06	58.20	+00	34	44.2		9 675
1990	RL2	*	1990	09	15.31146	22	45	11.53	-04	46	21.0	16.8	9 675
1990	RL2		1990	09	15.34701	22	45	10.37	-04	46	49.8		9 675
1990	RL2		1990	09	18.19097	22	43	51.29	-05	26	33.9	17.5	9 675
1990	RL2		1990	09	18.22222	22	43	50.39	-05	27	00.3		9 675
1990	RL2		1990	09	20.26991	22	42	58.78	-05	54	38.4	16.8	9 675
1990	RL2		1990	09	20.30463	22	42	57.80	-05	55	05.4		9 675
1990	RM2	*	1990	09	15.33698	23	21	04.93	+04	21	42.6	16.8	9 675
1990	RM2		1990	09	15.37274	23	21	02.61	+04	21	44.0		9 675
1990	RM2		1990	09	16.32031	23	20	03.63	+04	21	48.6	17.0	9 675
1990	RM2		1990	09	16.35712	23	20	01.22	+04	21	49.1		9 675
1990	RM2		1990	09	19.26892	23	17	01.94	+04	21	37.7	16.8	9 675
1990	RM2		1990	09	19.29653	23	17	00.17	+04	21	38.1		9 675
1990	RN2	*	1990	09	15.33698	23	25	13.82	+02	28	40.7	17.5	9 675
1990	RN2		1990	09	15.37274	23	25	11.60	+02	28	37.6		9 675
1990	RN2		1990	09	16.32031	23	24	14.68	+02	26	07.4	17.5	9 675
1990	RN2		1990	09	16.35712	23	24	12.34	+02	26	00.5		9 675
1990	RN2		1990	09	19.26892	23	21	18.16	+02	18	03.2	17.5	9 675
1990	RN2		1990	09	19.29653	23	21	16.43	+02	17	57.8		9 675
1990	RO2	*	1990	09	15.33698	23	29	54.53	+02	12	44.3	17.5	9 675
1990	RO2		1990	09	15.37274	23	29	52.26	+02	12	33.6		9 675
1990	RO2		1990	09	16.32031	23	28	54.45	+02	07	57.1	17.2	9 675
1990	RO2		1990	09	16.35712	23	28	52.13	+02	07	46.0		9 675
1990	RO2		1990	09	19.26892	23	25	56.21	+01	53	23.4	17.8	9 675
1990	RO2		1990	09	19.29653	23	25	54.43	+01	53	14.3		9 675
1990	RO2		1990	09	20.33669	23	24	52.28	+01	48	02.0	17.5	9 675
1990	RO2		1990	09	20.36742	23	24	50.36	+01	47	52.5		9 675
1990	RP2	*	1990	09	15.33698	23	53	42.77	+05	19	49.7	17.5	9 675
1990	RP2		1990	09	15.37274	23	53	41.02	+05	19	38.0		9 675
1990	RP2		1990	09	16.33872	23	52	55.77	+05	14	02.3	17.5	9 675
1990	RP2		1990	09	16.37431	23	52	53.98	+05	13	49.3		9 675
1990	RP2		1990	09	19.40087	23	50	29.24	+04	55	22.2	17.8	9 675
1990	RP2		1990	09	19.42205	23	50	28.12	+04	55	13.7		9 675
1990	RP2		1990	09	20.33669	23	49	44.43	+04	49	24.4	17.5	9 675
1990	RP2		1990	09	20.36742	23	49	42.81	+04	49	14.3		9 675
1990	RQ2	*	1990	09	15.38090	00	08	12.46	+03	36	45.9	16.5	9 675
1990	RQ2		1990	09	16.33872	00	07	18.63	+03	35	51.6	16.5	9 675
1990	RQ2		1990	09	16.37431	00	07	16.48	+03	35	49.1		9 675
1990	RQ2		1990	09	19.40087	00	04	20.31	+03	32	12.8	16.5	9 675
1990	RQ2		1990	09	19.42205	00	04	19.01	+03	32	10.0		9 675
1990	RR2	*	1990	09	15.38090	00	08	48.78	+04	27	54.3	16.8	9 675
1990	RR2		1990	09	16.33872	00	08	08.06	+04	19	25.8	16.5	9 675
1990	RR2		1990	09	16.37431	00	08	06.40	+04	19	06.7		9 675
1990	RR2		1990	09	19.40087	00	05	53.94	+03	51	24.7	16.2	9 675
1990	RR2		1990	09	19.42205	00	05	52.96	+03	51	12.8		9 675
1990	RS2	*	1990	09	15.38090	00	13	28.58	+05	30	02.5	17.2	9 675
1990	RS2		1990	09	16.33872	00	12	40.48	+05	26	11.5	17.0	9 675
1990	RS2		1990	09	16.37431	00	12	38.55	+05	26	02.5		9 675
1990	RS2		1990	09	17.35573	00	11	48.36	+05	21	51.4	17.2	9 675
1990	RS2		1990	09	17.39166	00	11	46.32	+05	21	41.8		9 675
1990	RS2		1990	09	19.40087	00	10	00.87	+05	12	48.7	16.8	9 675
1990	RS2		1990	09	19.42205	00	09	59.70	+05	12	42.9		9 675
1990	RT2	*	1990	09	15.38090	00	14	39.18	+02	38	36.6	17.2	9 675
1990	RT2		1990	09	17.35573	00	12	42.94	+02	41	31.7	17.0	9 675
1990	RT2		1990	09	17.39166	00	12	40.63	+02	41	34.2		9 675

1990	RT2		1990	09	19.40087	00	10	39.35	+02	44	16.4	17.0	9 675
1990	RT2		1990	09	19.42205	00	10	37.97	+02	44	17.5		9 675
1990	RU2	*	1990	09	15.38090	00	16	35.12	+04	06	59.4	17.5	9 675
1990	RU2		1990	09	16.33872	00	15	38.85	+04	05	56.0	17.5	9 675
1990	RU2		1990	09	16.37431	00	15	36.63	+04	05	52.3		9 675
1990	RU2		1990	09	17.35573	00	14	38.30	+04	04	32.8	17.5	9 675
1990	RU2		1990	09	17.39166	00	14	36.06	+04	04	30.7		9 675
1990	RU2		1990	09	19.40087	00	12	34.40	+04	01	37.1	17.5	9 675
1990	RU2		1990	09	19.42205	00	12	33.10	+04	01	35.4		9 675
1990	RV2	*	1990	09	15.33698	23	46	32.53	+07	53	42.1	16.8	9 675
1990	RV2		1990	09	15.37274	23	46	30.82	+07	53	27.3		9 675
1990	RV2		1990	09	18.29497	23	44	15.40	+07	32	03.2	16.5	9 675
1990	RV2		1990	09	18.32760	23	44	13.86	+07	31	48.1		9 675
1990	RV2		1990	09	20.33669	23	42	39.91	+07	16	26.5	16.8	9 675
1990	RV2		1990	09	20.36742	23	42	38.40	+07	16	12.9		9 675
1990	RW2	*	1990	09	15.33698	23	47	18.86	+06	18	26.5	17.2	9 675
1990	RW2		1990	09	15.37274	23	47	17.25	+06	18	24.5		9 675
1990	RW2		1990	09	18.29497	23	45	11.35	+06	14	05.3	17.5	9 675
1990	RW2		1990	09	18.32760	23	45	09.68	+06	14	01.1		9 675
1990	RW2		1990	09	20.33669	23	43	42.15	+06	10	10.8	17.5	9 675
1990	RW2		1990	09	20.36742	23	43	40.67	+06	10	09.3		9 675
1990	RX2	*	1990	09	15.33698	23	48	58.77	+06	21	32.8	17.0	9 675
1990	RX2		1990	09	15.37274	23	48	56.54	+06	21	35.9		9 675
1990	RX2		1990	09	18.29497	23	46	01.57	+06	24	52.8	17.2	9 675
1990	RX2		1990	09	18.32760	23	45	59.37	+06	24	52.7		9 675
1990	RX2		1990	09	20.33669	23	43	57.96	+06	26	27.5	17.2	9 675
1990	RX2		1990	09	20.36742	23	43	55.97	+06	26	30.2		9 675
1990	RY2	*	1990	09	15.38090	00	10	26.65	+05	01	27.0	17.5	9 675
1990	RY2		1990	09	16.33872	00	09	51.06	+04	58	02.8	17.5	9 675
1990	RY2		1990	09	16.37431	00	09	49.62	+04	57	55.0		9 675
1990	RY2		1990	09	19.40087	00	07	54.81	+04	46	33.2	17.5	9 675
1990	RY2		1990	09	19.42205	00	07	54.01	+04	46	28.3		9 675
1990	RZ2	*	1990	09	14.33976	23	44	24.52	+02	27	36.7	17.2	9 675
1990	RZ2		1990	09	14.37673	23	44	22.40	+02	27	26.0		9 675
1990	RZ2		1990	09	20.33669	23	38	33.45	+01	59	22.6	17.0	9 675
1990	RZ2		1990	09	20.36742	23	38	31.57	+01	59	13.5		9 675
1990	RA3	*	1990	09	14.33976	23	46	48.16	+00	21	11.2	17.8	9 675
1990	RA3		1990	09	14.37673	23	46	46.26	+00	20	58.7		9 675
1990	RA3		1990	09	18.30295	23	43	35.71	-00	00	34.5	17.8	9 675
1990	RA3		1990	09	18.33576	23	43	34.10	-00	00	47.4		9 675
1990	RB3	*	1990	09	14.33976	23	47	51.38	+02	08	36.5	17.2	9 675
1990	RB3		1990	09	14.37673	23	47	50.04	+02	07	57.8		9 675
1990	RB3		1990	09	18.30295	23	45	35.94	+00	58	07.1	17.5	9 675
1990	RB3		1990	09	18.33576	23	45	34.82	+00	57	30.8		9 675
1990	RC3	*	1990	09	14.33976	23	48	40.87	+02	08	58.7	17.0	9 675
1990	RC3		1990	09	14.37673	23	48	38.86	+02	08	43.9		9 675
1990	RC3		1990	09	18.30295	23	45	13.67	+01	41	50.5	16.8	9 675
1990	RC3		1990	09	18.33576	23	45	11.89	+01	41	34.6		9 675
1990	RD3	*	1990	09	14.33976	23	49	32.84	+01	35	40.1	16.5	9 675
1990	RD3		1990	09	15.33698	23	48	43.33	+01	32	06.5	16.8	9 675
1990	RD3		1990	09	15.37274	23	48	41.33	+01	31	58.7		9 675
1990	RE3	*	1990	09	14.33976	23	49	48.43	+03	04	38.6	17.5	9 675
1990	RE3		1990	09	14.37673	23	49	46.44	+03	04	25.1		9 675
1990	RE3		1990	09	18.30295	23	46	23.95	+02	38	49.0	17.8	9 675
1990	RE3		1990	09	18.33576	23	46	22.07	+02	38	32.8		9 675
1990	RF3	*	1990	09	14.33976	23	50	01.24	-03	08	09.8	17.5	9 675
1990	RF3		1990	09	14.37673	23	49	58.91	-03	08	01.0		9 675
1990	RF3		1990	09	18.30295	23	45	58.53	-02	54	28.6	17.5	9 675
1990	RF3		1990	09	18.33576	23	45	56.41	-02	54	20.9		9 675

1990	RG3	*	1990	09	14.33976	23	50	48.40	-00	35	48.1	17.5	9 675
1990	RG3		1990	09	14.37673	23	50	46.65	-00	36	00.6		9 675
1990	RG3		1990	09	18.30295	23	47	46.97	-00	58	15.0	17.5	9 675
1990	RG3		1990	09	18.33576	23	47	45.54	-00	58	25.5		9 675
1990	RH3	*	1990	09	14.33976	23	51	49.14	-00	33	09.7	17.0	9 675
1990	RH3		1990	09	14.37673	23	51	47.68	-00	33	27.9		9 675
1990	RH3		1990	09	18.30295	23	49	08.03	-01	07	34.0	17.0	9 675
1990	RH3		1990	09	18.33576	23	49	06.66	-01	07	51.2		9 675
1990	RJ3	*	1990	09	14.33976	23	52	08.16	-00	10	43.3	17.8	9 675
1990	RJ3		1990	09	14.37673	23	52	05.76	-00	10	47.0		9 675
1990	RJ3		1990	09	18.30295	23	47	55.30	-00	20	05.8	17.8	9 675
1990	RJ3		1990	09	18.33576	23	47	53.24	-00	20	10.5		9 675
1990	RK3	*	1990	09	14.33976	23	52	21.75	+01	52	10.4	17.5	9 675
1990	RK3		1990	09	14.37673	23	52	19.87	+01	51	58.5		9 675
1990	RK3		1990	09	18.30295	23	49	16.50	+01	31	36.7	17.5	9 675
1990	RK3		1990	09	18.33576	23	49	14.74	+01	31	23.5		9 675
1990	RL3	*	1990	09	14.33976	23	53	58.90	+00	37	11.5	17.0	9 675
1990	RL3		1990	09	14.37673	23	53	56.63	+00	37	15.4		9 675
1990	RL3		1990	09	18.30295	23	50	09.70	+00	44	30.3	17.0	9 675
1990	RL3		1990	09	18.33576	23	50	07.65	+00	44	33.9		9 675
1990	RM3	*	1990	09	14.33976	23	56	07.98	-00	11	38.5	17.0	9 675
1990	RM3		1990	09	14.37673	23	56	05.49	-00	11	45.3		9 675
1990	RM3		1990	09	18.30295	23	51	50.61	-00	23	48.2	17.5	9 675
1990	RM3		1990	09	18.33576	23	51	48.43	-00	23	54.2		9 675
1990	RN3	*	1990	09	14.33976	23	57	06.68	+00	27	00.9	17.0	9 675
1990	RN3		1990	09	14.37673	23	57	04.76	+00	26	41.4		9 675
1990	RN3		1990	09	18.30295	23	53	40.24	-00	08	57.7	17.2	9 675
1990	RN3		1990	09	18.33576	23	53	38.44	-00	09	16.1		9 675
1990	RO3	*	1990	09	14.33976	23	57	19.27	-02	04	22.7	17.8	9 675
1990	RO3		1990	09	14.37673	23	57	17.41	-02	04	33.3		9 675
1990	RO3		1990	09	18.30295	23	54	07.16	-02	22	18.0	17.8	9 675
1990	RO3		1990	09	18.33576	23	54	05.51	-02	22	27.5		9 675
1990	RP3	*	1990	09	14.33976	23	59	00.75	-02	11	00.7	17.2	9 675
1990	RP3		1990	09	14.37673	23	58	58.40	-02	11	06.1		9 675
1990	RP3		1990	09	18.30295	23	55	00.96	-02	20	53.0	17.2	9 675
1990	RP3		1990	09	18.33576	23	54	58.87	-02	20	58.0		9 675
1990	RR3	*	1990	09	14.33976	00	00	25.66	-03	11	33.5	17.5	9 675
1990	RR3		1990	09	14.37673	00	00	23.53	-03	11	46.2		9 675
1990	RR3		1990	09	18.30295	23	56	50.69	-03	30	56.0	17.2	9 675
1990	RR3		1990	09	18.33576	23	56	48.83	-03	31	05.8		9 675
1990	RS3	*	1990	09	14.33976	00	01	21.24	-03	26	55.8	17.5	9 675
1990	RS3		1990	09	14.37673	00	01	19.41	-03	27	12.1		9 675
1990	RS3		1990	09	18.30295	23	58	07.46	-03	56	42.8	17.2	9 675
1990	RS3		1990	09	18.33576	23	58	05.68	-03	56	57.5		9 675
1990	RT3	*	1990	09	14.33976	00	01	26.51	-02	32	39.9	17.5	9 675
1990	RT3		1990	09	14.37673	00	01	24.33	-02	32	44.6		9 675
1990	RT3		1990	09	18.30295	23	57	45.18	-02	40	16.5	17.8	9 675
1990	RT3		1990	09	18.33576	23	57	43.19	-02	40	20.5		9 675
1990	RV3	*	1990	09	14.33976	00	01	31.79	+01	35	55.0	17.5	9 675
1990	RV3		1990	09	14.37673	00	01	29.82	+01	35	51.0		9 675
1990	RV3		1990	09	18.30295	23	58	15.93	+01	30	28.7	17.5	9 675
1990	RV3		1990	09	18.33576	23	58	14.18	+01	30	25.3		9 675
1990	RW3	*	1990	09	14.33976	00	02	30.56	-02	40	35.1	16.0	9 675
1990	RW3		1990	09	14.37673	00	02	28.60	-02	40	44.8		9 675
1990	RW3		1990	09	18.30295	23	59	07.20	-02	58	03.3	16.0	9 675
1990	RW3		1990	09	18.33576	23	59	05.38	-02	58	11.9		9 675
1990	RX3	*	1990	09	14.33976	00	03	01.27	-00	10	54.8	17.8	9 675
1990	RX3		1990	09	14.37673	00	02	59.37	-00	11	01.6		9 675
1990	RX3		1990	09	18.30295	23	59	48.53	-00	23	30.7	17.8	9 675

1990	RX3		1990	09	18.33576	23	59	46.75	-00	23	37.3		9 675
1990	RY3	*	1990	09	14.33976	00	03	10.97	-00	18	52.3	17.5	9 675
1990	RY3		1990	09	14.37673	00	03	09.43	-00	19	00.9		9 675
1990	RY3		1990	09	18.30295	00	00	43.53	-00	36	06.0	17.5	9 675
1990	RY3		1990	09	18.33576	00	00	42.06	-00	36	13.5		9 675
1990	RZ3	*	1990	09	14.33976	00	03	12.41	-00	33	04.7	17.8	9 675
1990	RZ3		1990	09	14.37673	00	03	10.20	-00	33	05.8		9 675
1990	RZ3		1990	09	18.30295	23	59	30.80	-00	31	44.1	17.8	9 675
1990	RZ3		1990	09	18.33576	23	59	28.85	-00	31	44.1		9 675
1990	RA4	*	1990	09	14.33976	00	04	09.87	+02	12	18.4	17.8	9 675
1990	RA4		1990	09	14.37673	00	04	07.83	+02	12	17.0		9 675
1990	RA4		1990	09	18.30295	00	00	30.66	+02	10	28.0	17.5	9 675
1990	RA4		1990	09	18.33576	00	00	28.83	+02	10	26.4		9 675
1990	RB4	*	1990	09	14.33976	00	04	27.05	+00	54	12.3	17.8	9 675
1990	RB4		1990	09	14.37673	00	04	25.61	+00	54	02.8		9 675
1990	RB4		1990	09	18.30295	00	01	41.59	+00	34	40.7	17.8	9 675
1990	RB4		1990	09	18.33576	00	01	40.18	+00	34	30.1		9 675
1990	RC4	*	1990	09	14.33976	00	05	27.86	+03	07	47.9	17.8	9 675
1990	RC4		1990	09	14.37673	00	05	25.90	+03	07	27.5		9 675
1990	RC4		1990	09	18.30295	00	02	12.49	+02	31	30.4	17.5	9 675
1990	RC4		1990	09	18.33576	00	02	10.82	+02	31	11.1		9 675
1990	RD4	*	1990	09	14.33976	00	05	54.50	+01	38	04.2	18.0	9 675
1990	RD4		1990	09	14.37673	00	05	52.62	+01	37	53.1		9 675
1990	RD4		1990	09	18.30295	00	02	51.39	+01	16	07.4	18.0	9 675
1990	RD4		1990	09	18.33576	00	02	49.77	+01	15	55.9		9 675
1990	RE4	*	1990	09	14.33976	00	05	59.14	+01	48	10.5	17.5	9 675
1990	RE4		1990	09	14.37673	00	05	57.69	+01	48	00.1		9 675
1990	RE4		1990	09	18.30295	00	03	10.60	+01	27	51.8	17.8	9 675
1990	RE4		1990	09	18.33576	00	03	09.24	+01	27	43.4		9 675
1990	RF4	*	1990	09	14.33976	00	06	04.35	-01	41	19.0	16.8	9 675
1990	RF4		1990	09	14.37673	00	06	01.94	-01	41	07.5		9 675
1990	RF4		1990	09	18.30295	00	01	55.94	-01	20	34.9	16.5	9 675
1990	RF4		1990	09	18.33576	00	01	53.71	-01	20	24.5		9 675
1990	RG4	*	1990	09	14.33976	00	06	24.09	-01	23	06.2	17.8	9 675
1990	RG4		1990	09	14.37673	00	06	22.44	-01	23	17.8		9 675
1990	RG4		1990	09	18.33576	00	03	31.50	-01	43	00.3		9 675
1990	RH4	*	1990	09	14.33976	00	07	02.01	-02	00	30.5	17.2	9 675
1990	RH4		1990	09	14.37673	00	06	59.96	-02	00	49.3		9 675
1990	RH4		1990	09	18.30295	00	03	32.34	-02	34	26.2	17.0	9 675
1990	RH4		1990	09	18.33576	00	03	30.37	-02	34	43.5		9 675
1990	RJ4	*	1990	09	14.33976	00	08	22.55	-01	21	01.5	17.5	9 675
1990	RJ4		1990	09	14.37673	00	08	21.36	-01	21	23.8		9 675
1990	RJ4		1990	09	18.30295	00	06	17.00	-02	01	00.9	16.8	9 675
1990	RJ4		1990	09	18.33576	00	06	15.78	-02	01	21.0		9 675
1990	RK4	*	1990	09	14.33976	00	08	49.79	+00	22	39.6	16.8	9 675
1990	RK4		1990	09	14.37673	00	08	47.37	+00	22	51.0		9 675
1990	RK4		1990	09	18.30295	00	04	46.08	+00	42	29.9	17.0	9 675
1990	RK4		1990	09	18.33576	00	04	43.79	+00	42	39.2		9 675
1990	RL4	*	1990	09	14.33976	00	11	43.37	-00	50	07.8	17.5	9 675
1990	RL4		1990	09	14.37673	00	11	41.58	-00	50	28.7		9 675
1990	RL4		1990	09	18.30295	00	08	38.67	-01	28	55.2	17.5	9 675
1990	RL4		1990	09	18.33576	00	08	36.85	-01	29	15.9		9 675
1990	RM4	*	1990	09	14.33976	00	11	45.31	-02	06	24.6	16.0	9 675
1990	RM4		1990	09	14.37673	00	11	43.60	-02	06	43.6		9 675
1990	RM4		1990	09	18.30295	00	08	46.63	-02	41	34.2	16.5	9 675
1990	RM4		1990	09	18.33576	00	08	44.99	-02	41	51.2		9 675
1990	RN4	*	1990	09	14.33976	00	13	24.82	-01	24	06.7	17.5	9 675
1990	RN4		1990	09	14.37673	00	13	23.20	-01	24	19.1		9 675
1990	RN4		1990	09	18.30295	00	10	27.50	-01	47	15.6	17.0	9 675

1990	RN4		1990	09	18.33576	00	10	25.98	-01	47	27.4		9 675
1990	RO4	*	1990	09	14.33976	00	13	52.30	-01	26	23.3	17.2	9 675
1990	RO4		1990	09	14.37673	00	13	50.57	-01	26	30.5		9 675
1990	RO4		1990	09	18.30295	00	10	54.77	-01	38	30.8	17.2	9 675
1990	RO4		1990	09	18.33576	00	10	53.19	-01	38	38.2		9 675
1990	RP4	*	1990	09	15.33698	23	22	21.09	+02	23	21.2	17.5	9 675
1990	RP4		1990	09	15.37274	23	22	19.32	+02	23	02.0		9 675
1990	RP4		1990	09	16.32031	23	21	35.55	+02	13	41.0	17.5	9 675
1990	RP4		1990	09	16.35712	23	21	33.80	+02	13	18.7		9 675
1990	RQ4	*	1990	09	15.33698	23	23	45.61	+02	06	11.8	17.5	9 675
1990	RQ4		1990	09	15.37274	23	23	43.69	+02	06	04.2		9 675
1990	RQ4		1990	09	16.32031	23	22	56.09	+02	02	16.2	17.5	9 675
1990	RQ4		1990	09	16.35712	23	22	54.21	+02	02	07.2		9 675
1990	RR4	*	1990	09	15.33698	23	24	03.09	+06	12	55.9	17.0	9 675
1990	RR4		1990	09	15.37274	23	24	01.63	+06	12	38.7		9 675
1990	RR4		1990	09	20.33669	23	20	43.79	+05	31	29.5	17.2	9 675
1990	RR4		1990	09	20.36742	23	20	42.62	+05	31	12.1		9 675
1990	RS4	*	1990	09	15.33698	23	28	54.22	+02	41	05.4	17.5	9 675
1990	RS4		1990	09	15.37274	23	28	51.96	+02	40	55.3		9 675
1990	RS4		1990	09	20.33669	23	23	49.54	+02	17	25.2	17.2	9 675
1990	RS4		1990	09	20.36742	23	23	47.55	+02	17	16.8		9 675
1990	RT4	*	1990	09	15.33698	23	29	58.66	+07	53	02.1	16.0	9 675
1990	RT4		1990	09	15.37274	23	29	56.69	+07	53	05.9		9 675
1990	RT4		1990	09	18.29497	23	27	24.16	+07	56	59.5	15.8	9 675
1990	RT4		1990	09	18.32760	23	27	22.42	+07	57	01.8		9 675
1990	RU4	*	1990	09	15.33698	23	32	09.16	+04	16	07.7	17.5	9 675
1990	RU4		1990	09	15.37274	23	32	07.27	+04	15	50.9		9 675
1990	RU4		1990	09	20.33669	23	27	57.03	+03	35	40.3	17.5	9 675
1990	RU4		1990	09	20.36742	23	27	55.24	+03	35	24.7		9 675
1990	RV4	*	1990	09	15.33698	23	33	09.56	+03	01	49.2	17.5	9 675
1990	RV4		1990	09	15.37274	23	33	07.40	+03	01	40.0		9 675
1990	RV4		1990	09	20.33669	23	28	24.59	+02	39	13.5	17.2	9 675
1990	RV4		1990	09	20.36742	23	28	22.81	+02	39	05.9		9 675
1990	RW4	*	1990	09	15.33698	23	33	52.99	+02	36	00.5	17.0	9 675
1990	RW4		1990	09	15.37274	23	33	51.31	+02	35	52.2		9 675
1990	RW4		1990	09	20.33669	23	30	04.39	+02	15	23.3	17.0	9 675
1990	RW4		1990	09	20.36742	23	30	02.95	+02	15	15.7		9 675
1990	RX4	*	1990	09	15.33698	23	34	29.68	+01	32	19.8	17.0	9 675
1990	RX4		1990	09	15.37274	23	34	27.42	+01	32	18.6		9 675
1990	RX4		1990	09	20.33669	23	29	19.47	+01	30	21.2	17.2	9 675
1990	RX4		1990	09	20.36742	23	29	17.50	+01	30	20.4		9 675
1990	RY4	*	1990	09	15.33698	23	36	02.96	+03	47	42.6	17.5	9 675
1990	RY4		1990	09	15.37274	23	36	01.32	+03	47	24.4		9 675
1990	RY4		1990	09	20.33669	23	32	18.49	+03	03	27.1	17.2	9 675
1990	RY4		1990	09	20.36742	23	32	17.03	+03	03	11.4		9 675
1990	RZ4	*	1990	09	15.33698	23	36	46.17	+04	40	51.7	16.2	9 675
1990	RZ4		1990	09	15.37274	23	36	44.76	+04	40	23.9		9 675
1990	RZ4		1990	09	20.33669	23	33	40.32	+03	35	18.8	16.8	9 675
1990	RZ4		1990	09	20.36742	23	33	39.11	+03	34	54.7		9 675
1990	RA5	*	1990	09	15.33698	23	36	57.92	+01	32	58.3	17.2	9 675
1990	RA5		1990	09	15.37274	23	36	56.24	+01	32	33.3		9 675
1990	RA5		1990	09	20.33009	23	33	11.24	+00	35	30.8	17.2	9 675
1990	RA5		1990	09	20.33669	23	33	10.63	+00	35	32.4		9 675
1990	RA5		1990	09	20.36094	23	33	09.83	+00	35	09.9		9 675
1990	RA5		1990	09	20.36742	23	33	09.53	+00	35	07.1		9 675
1990	RB5	*	1990	09	15.33698	23	37	16.46	+02	27	23.1	16.5	9 675
1990	RB5		1990	09	15.37274	23	37	14.83	+02	27	08.5		9 675
1990	RB5		1990	09	20.33669	23	33	37.89	+01	54	10.3	17.2	9 675
1990	RB5		1990	09	20.36742	23	33	36.46	+01	53	58.3		9 675

1990	RC5	*	1990	09	15.33698	23	38	40.52	+05	03	38.6	17.5	9 675
1990	RC5		1990	09	15.37274	23	38	38.41	+05	03	23.3		9 675
1990	RC5		1990	09	20.33669	23	33	59.26	+04	28	07.9	17.2	9 675
1990	RC5		1990	09	20.36742	23	33	57.48	+04	27	55.8		9 675
1990	RD5	*	1990	09	15.33698	23	39	20.57	+04	28	20.9	17.5	9 675
1990	RD5		1990	09	15.37274	23	39	18.79	+04	28	08.7		9 675
1990	RD5		1990	09	20.33669	23	35	20.21	+03	59	13.6	17.5	9 675
1990	RD5		1990	09	20.36742	23	35	18.68	+03	59	03.9		9 675
1990	RE5	*	1990	09	15.33698	23	45	14.74	+06	45	23.2	17.5	9 675
1990	RE5		1990	09	15.37274	23	45	13.24	+06	45	28.5		9 675
1990	RE5		1990	09	18.29497	23	42	43.09	+06	38	55.1	17.5	9 675
1990	RE5		1990	09	18.32760	23	42	41.41	+06	38	50.3		9 675
1990	RE5		1990	09	20.33669	23	40	58.35	+06	34	01.5	17.5	9 675
1990	RE5		1990	09	20.36742	23	40	56.62	+06	33	57.9		9 675
1990	RF5	*	1990	09	15.33698	23	46	16.80	+05	35	30.3	16.8	9 675
1990	RF5		1990	09	15.37274	23	46	15.06	+05	35	13.1		9 675
1990	RF5		1990	09	20.33669	23	42	32.51	+04	53	20.9	16.5	9 675
1990	RF5		1990	09	20.36742	23	42	31.04	+04	53	06.5		9 675
1990	RG5	*	1990	09	15.33698	23	49	04.64	+06	00	47.3	17.2	9 675
1990	RG5		1990	09	15.37274	23	49	02.68	+06	00	36.3		9 675
1990	RG5		1990	09	20.33669	23	44	23.71	+05	26	32.5	17.2	9 675
1990	RG5		1990	09	20.36742	23	44	21.90	+05	26	20.5		9 675
1990	RH5	*	1990	09	15.33698	23	50	33.92	+04	01	01.4	17.5	9 675
1990	RH5		1990	09	15.37274	23	50	31.66	+04	00	57.2		9 675
1990	RH5		1990	09	20.33669	23	45	25.92	+03	50	48.5	17.5	9 675
1990	RH5		1990	09	20.36742	23	45	23.93	+03	50	44.0		9 675
1990	RJ5	*	1990	09	15.33698	23	51	16.98	+04	08	58.5	17.5	9 675
1990	RJ5		1990	09	15.37274	23	51	14.97	+04	08	46.1		9 675
1990	RJ5		1990	09	20.33669	23	46	53.12	+03	41	51.8	17.5	9 675
1990	RJ5		1990	09	20.36742	23	46	51.42	+03	41	42.2		9 675
1990	RK5	*	1990	09	15.33698	23	51	59.24	+04	08	48.5	17.0	9 675
1990	RK5		1990	09	15.37274	23	51	57.69	+04	08	32.7		9 675
1990	RK5		1990	09	20.33669	23	48	32.84	+03	31	42.5	16.8	9 675
1990	RK5		1990	09	20.36742	23	48	31.47	+03	31	29.0		9 675
1990	RL5	*	1990	09	15.38090	00	12	13.81	+01	54	32.5	17.5	9 675
1990	RL5		1990	09	17.35573	00	10	43.44	+01	48	25.7	17.5	9 675
1990	RL5		1990	09	17.39166	00	10	41.73	+01	48	19.4		9 675
1990	RM5	*	1990	09	15.38090	00	17	57.61	+01	15	49.7	16.8	9 675
1990	RM5		1990	09	17.35573	00	16	25.19	+01	07	07.6	16.8	9 675
1990	RM5		1990	09	17.39166	00	16	23.34	+01	06	57.6		9 675
1990	RN5	*	1990	09	15.38090	00	20	12.53	+00	35	25.6	17.8	9 675
1990	RN5		1990	09	17.35573	00	18	17.40	+00	38	30.1	17.5	9 675
1990	RN5		1990	09	17.39166	00	18	15.17	+00	38	33.6		9 675
1990	RO5	*	1990	09	15.38090	00	26	18.18	+05	52	52.8	17.8	9 675
1990	RO5		1990	09	17.35573	00	24	38.90	+05	53	23.1	17.5	9 675
1990	RO5		1990	09	17.39166	00	24	37.07	+05	53	22.9		9 675
1990	RP5	*	1990	09	15.38090	00	27	02.94	+03	07	02.0	17.8	9 675
1990	RP5		1990	09	17.35573	00	25	05.91	+03	02	18.7	17.5	9 675
1990	RP5		1990	09	17.39166	00	25	03.60	+03	02	12.5		9 675
1990	RQ5	*	1990	09	15.38090	00	28	30.77	+03	03	58.5	17.8	9 675
1990	RQ5		1990	09	17.35573	00	26	49.99	+02	46	29.9	17.8	9 675
1990	RQ5		1990	09	17.39166	00	26	48.13	+02	46	10.6		9 675
1990	RR5	*	1990	09	15.38090	00	31	30.79	+05	10	38.8	17.2	9 675
1990	RR5		1990	09	17.35573	00	30	04.56	+04	59	32.4	17.2	9 675
1990	RR5		1990	09	17.39166	00	30	02.80	+04	59	19.4		9 675
1990	RS5	*	1990	09	15.38090	00	33	28.92	+05	06	10.1	17.5	9 675
1990	RS5		1990	09	17.35573	00	31	45.47	+05	04	10.4	17.5	9 675
1990	RS5		1990	09	17.39166	00	31	43.47	+05	04	09.3		9 675
1990	RT5	*	1990	09	15.38090	00	38	22.46	+02	19	23.9	17.5	9 675

1990	RT5		1990	09	17.35573	00	37	01.89	+02	08	56.8	17.5	9 675
1990	RT5		1990	09	17.39166	00	37	00.33	+02	08	45.2		9 675
1990	SQ		1990	12	15.08698	22	34	26.15	+42	30	31.1	13.5	2 675
1990	SQ		1990	12	15.11389	22	34	31.28	+42	31	32.5		2 675
1990	SQ		1990	12	18.09618	22	44	52.84	+44	23	39.7		2 675
1990	SQ		1990	12	18.11719	22	44	57.19	+44	24	26.6		2 675
1990	SO1		1990	09	17.34774	00	20	08.43	+13	15	29.0	16.5	9 675
1990	SO1		1990	09	17.38385	00	20	06.90	+13	15	15.3		9 675
1990	SO1		1990	09	20.38590	00	18	04.64	+12	55	07.2	16.5	9 675
1990	SO1		1990	09	20.42083	00	18	03.08	+12	54	52.5		9 675
1990	SP1		1990	09	19.40087	00	20	33.53	+07	59	07.5	17.2	9 675
1990	SP1		1990	09	19.42205	00	20	32.29	+07	59	07.8		9 675
1990	SW1		1990	09	17.29722	23	43	31.76	+17	32	30.3	16.5	9 675
1990	SW1		1990	09	17.33108	23	43	30.95	+17	31	31.8		9 675
1990	SW1		1990	09	19.38021	23	42	49.77	+16	30	54.3	16.5	9 675
1990	SW1		1990	09	19.40764	23	42	49.06	+16	30	03.1		9 675
1990	SZ1		1990	09	15.38090	00	15	50.55	+01	41	35.0	16.5	9 675
1990	SZ1		1990	09	17.35573	00	14	41.88	+01	20	08.7	16.0	9 675
1990	SZ1		1990	09	17.39166	00	14	40.55	+01	19	45.0		9 675
1990	SC4		1990	09	18.29497	23	39	28.44	+08	45	36.7	17.2	9 675
1990	SC4		1990	09	18.32760	23	39	26.96	+08	44	59.9		9 675
1990	SF4		1990	09	18.29497	23	34	02.59	+13	39	02.5	17.5	9 675
1990	SF4		1990	09	18.32760	23	34	00.94	+13	38	43.8		9 675
1990	SG4		1990	09	18.29497	23	36	25.30	+11	05	20.3	16.2	9 675
1990	SG4		1990	09	18.32760	23	36	23.22	+11	05	06.5		9 675
1990	SL9		1990	09	14.33976	00	06	58.89	-03	18	30.3	17.5	9 675
1990	SL9		1990	09	14.37673	00	06	57.25	-03	18	42.0		9 675
1990	SL9		1990	09	18.30295	00	04	05.45	-03	38	23.8	17.8	9 675
1990	SL9		1990	09	18.33576	00	04	03.92	-03	38	32.7		9 675
1990	SX9	*	1990	09	17.30556	00	00	07.11	-10	09	21.7	17.5	9 675
1990	SX9		1990	09	17.33941	00	00	05.56	-10	09	31.7		9 675
1990	SX9		1990	09	20.34366	23	57	57.47	-10	25	46.3	17.0	9 675
1990	SX9		1990	09	20.37373	23	57	56.15	-10	25	58.0		9 675
1990	SY9	*	1990	09	17.30556	00	02	15.45	-12	49	35.5	17.5	9 675
1990	SY9		1990	09	17.33941	00	02	13.41	-12	49	43.0		9 675
1990	SY9		1990	09	20.34366	23	59	16.72	-13	04	14.3	17.0	9 675
1990	SY9		1990	09	20.37373	23	59	14.61	-13	04	23.9		9 675
1990	SZ9	*	1990	09	17.30556	00	05	55.98	-15	09	26.4	17.2	9 675
1990	SZ9		1990	09	17.33941	00	05	54.33	-15	09	46.1		9 675
1990	SZ9		1990	09	20.34366	00	03	37.61	-15	38	26.4	17.0	9 675
1990	SZ9		1990	09	20.37373	00	03	36.08	-15	38	42.2		9 675
1990	SA10	*	1990	09	17.30556	00	09	15.60	-12	49	31.8	17.2	9 675
1990	SA10		1990	09	17.33941	00	09	14.17	-12	49	44.9		9 675
1990	SA10		1990	09	20.34366	00	07	07.48	-13	10	38.8	17.2	9 675
1990	SA10		1990	09	20.37373	00	07	06.05	-13	10	52.0		9 675
1990	SB10	*	1990	09	17.30556	23	38	38.93	-15	02	49.6	17.5	9 675
1990	SB10		1990	09	17.33941	23	38	37.10	-15	02	53.7		9 675
1990	SB10		1990	09	19.30417	23	36	53.36	-15	06	23.4	17.0	9 675
1990	SB10		1990	09	19.33472	23	36	51.72	-15	06	26.0		9 675
1990	SB10		1990	09	20.34366	23	35	58.66	-15	07	56.5	17.2	9 675
1990	SB10		1990	09	20.37373	23	35	57.04	-15	07	59.5		9 675
1990	SC10	*	1990	09	17.30556	23	41	50.50	-15	41	33.4	17.2	9 675
1990	SC10		1990	09	17.33941	23	41	48.74	-15	41	38.4		9 675
1990	SC10		1990	09	19.30417	23	40	07.05	-15	46	11.4	16.8	9 675
1990	SC10		1990	09	19.33472	23	40	05.38	-15	46	15.6		9 675
1990	SC10		1990	09	20.34366	23	39	13.24	-15	48	20.1	16.8	9 675
1990	SC10		1990	09	20.37373	23	39	11.61	-15	48	23.8		9 675
1990	SD10	*	1990	09	17.30556	23	44	54.83	-10	32	06.7	17.5	9 675
1990	SD10		1990	09	17.33941	23	44	52.48	-10	32	08.7		9 675

1990	SD10	1990	09	20.34366	23	41	27.49	-10	36	57.7	17.2	9 675
1990	SD10	1990	09	20.37373	23	41	25.26	-10	37	00.8		9 675
1990	SE10*	1990	09	17.30556	23	44	59.55	-10	11	46.5	17.5	9 675
1990	SE10	1990	09	17.33941	23	44	57.34	-10	11	49.2		9 675
1990	SE10	1990	09	20.34366	23	41	51.70	-10	15	42.4	17.0	9 675
1990	SE10	1990	09	20.37373	23	41	49.57	-10	15	46.1		9 675
1990	SF10*	1990	09	17.30556	23	45	33.56	-14	56	39.6	17.5	9 675
1990	SF10	1990	09	17.33941	23	45	31.57	-14	56	44.5		9 675
1990	SF10	1990	09	19.30417	23	43	42.09	-15	01	19.5	16.8	9 675
1990	SF10	1990	09	19.33472	23	43	40.22	-15	01	22.9		9 675
1990	SF10	1990	09	20.34366	23	42	44.09	-15	03	22.2	16.8	9 675
1990	SF10	1990	09	20.37373	23	42	42.28	-15	03	25.5		9 675
1990	SG10*	1990	09	17.30556	23	46	12.44	-15	13	31.2	17.5	9 675
1990	SG10	1990	09	17.33941	23	46	10.44	-15	13	43.4		9 675
1990	SG10	1990	09	19.30417	23	44	22.03	-15	25	24.5	17.2	9 675
1990	SG10	1990	09	19.33472	23	44	20.21	-15	25	34.4		9 675
1990	SG10	1990	09	20.34366	23	43	24.78	-15	31	09.4	17.5	9 675
1990	SG10	1990	09	20.37373	23	43	23.17	-15	31	18.6		9 675
1990	SH10*	1990	09	17.30556	23	47	15.62	-11	09	46.5	17.5	9 675
1990	SH10	1990	09	17.33941	23	47	13.66	-11	09	59.6		9 675
1990	SH10	1990	09	20.34366	23	44	29.72	-11	29	51.6	17.0	9 675
1990	SH10	1990	09	20.37373	23	44	27.95	-11	30	04.1		9 675
1990	SJ10*	1990	09	17.30556	23	52	12.59	-17	25	02.1	17.0	9 675
1990	SJ10	1990	09	17.33941	23	52	10.53	-17	25	15.0		9 675
1990	SJ10	1990	09	19.30417	23	50	18.68	-17	37	02.3	16.5	9 675
1990	SJ10	1990	09	19.33472	23	50	16.90	-17	37	12.1		9 675
1990	SJ10	1990	09	20.34366	23	49	19.76	-17	42	49.8	16.8	9 675
1990	SJ10	1990	09	20.37373	23	49	17.82	-17	42	56.3		9 675
1990	SK10*	1990	09	17.30556	23	54	05.45	-12	36	15.7	17.5	9 675
1990	SK10	1990	09	17.33941	23	54	03.61	-12	36	35.0		9 675
1990	SK10	1990	09	20.34366	23	52	04.16	-13	05	23.5	17.0	9 675
1990	SK10	1990	09	20.37373	23	52	02.44	-13	05	31.3		9 675
1990	SL10*	1990	09	17.30556	23	55	21.33	-13	45	26.9	17.5	9 675
1990	SL10	1990	09	17.33941	23	55	18.82	-13	45	22.2		9 675
1990	SL10	1990	09	19.30417	23	52	55.10	-13	41	33.7	17.0	9 675
1990	SL10	1990	09	19.33472	23	52	52.75	-13	41	30.1		9 675
1990	SL10	1990	09	20.34366	23	51	39.01	-13	39	15.2	17.0	9 675
1990	SL10	1990	09	20.37373	23	51	36.67	-13	39	12.0		9 675
1990	SM10*	1990	09	17.30556	23	59	03.68	-10	02	27.9	17.5	9 675
1990	SM10	1990	09	17.33941	23	59	01.77	-10	02	45.2		9 675
1990	SM10	1990	09	20.34366	23	55	12.10	-10	32	32.9	17.0	9 675
1990	SM10	1990	09	20.37373	23	55	10.27	-10	32	34.8		9 675
1990	SN10*	1990	09	17.30556	23	59	26.11	-14	20	04.1	17.0	9 675
1990	SN10	1990	09	17.33941	23	59	24.34	-14	20	17.8		9 675
1990	SN10	1990	09	20.34366	23	56	52.52	-14	40	25.6	16.8	9 675
1990	SN10	1990	09	20.37373	23	56	50.81	-14	40	37.6		9 675
1990	SO10*	1990	09	16.32031	23	28	47.31	+01	40	36.1	17.2	9 675
1990	SO10	1990	09	16.35712	23	28	45.34	+01	40	25.8		9 675
1990	SO10	1990	09	19.26892	23	26	13.91	+01	26	21.2	17.2	9 675
1990	SO10	1990	09	19.29653	23	26	12.27	+01	26	11.9		9 675
1990	SP10*	1990	09	16.33872	23	52	30.50	+06	45	29.0	17.2	9 675
1990	SP10	1990	09	16.37431	23	52	29.00	+06	45	06.4		9 675
1990	SP10	1990	09	19.40087	23	50	21.61	+06	12	41.7	17.2	9 675
1990	SP10	1990	09	19.42205	23	50	20.67	+06	12	28.9		9 675
1990	SP10	1990	09	20.33669	23	49	42.18	+06	02	27.3	17.2	9 675
1990	SP10	1990	09	20.36742	23	49	40.71	+06	02	07.5		9 675
1990	SQ10*	1990	09	17.29722	23	49	17.95	+15	01	10.3	16.2	9 675
1990	SQ10	1990	09	17.33108	23	49	16.25	+15	00	54.9		9 675
1990	SQ10	1990	09	17.34774	23	49	15.42	+15	00	43.5	16.5	9 675

1990	SQ10	1990	09	17.38385	23	49	13.75	+15	00	28.7		9 675
1990	SQ10	1990	09	19.38021	23	47	41.60	+14	44	36.5	16.2	9 675
1990	SQ10	1990	09	19.40764	23	47	40.26	+14	44	23.7		9 675
1990	SQ10	1990	09	20.38590	23	46	54.85	+14	36	12.0	16.5	9 675
1990	SQ10	1990	09	20.42083	23	46	53.14	+14	35	54.8		9 675
1990	SR10*	1990	09	17.34774	23	51	00.24	+12	25	33.4	17.2	9 675
1990	SR10	1990	09	17.38385	23	50	58.65	+12	25	24.6		9 675
1990	SR10	1990	09	18.29497	23	50	15.77	+12	21	47.7	17.5	9 675
1990	SR10	1990	09	18.32760	23	50	14.27	+12	21	40.5		9 675
1990	SR10	1990	09	20.38590	23	48	36.90	+12	13	02.5	17.5	9 675
1990	SR10	1990	09	20.42083	23	48	35.16	+12	12	54.2		9 675
1990	SS10*	1990	09	16.33872	23	51	58.38	+06	33	47.1	17.5	9 675
1990	SS10	1990	09	16.37431	23	51	55.89	+06	33	49.2		9 675
1990	SS10	1990	09	18.29497	23	49	49.14	+06	36	44.2	17.8	9 675
1990	SS10	1990	09	18.32760	23	49	46.87	+06	36	45.6		9 675
1990	SS10	1990	09	19.40087	23	48	35.24	+06	38	07.2	17.5	9 675
1990	SS10	1990	09	19.42205	23	48	33.81	+06	38	09.3		9 675
1990	SS10	1990	09	20.33669	23	47	33.06	+06	39	11.3	17.5	9 675
1990	SS10	1990	09	20.36742	23	47	30.97	+06	39	13.7		9 675
1990	ST10*	1990	09	16.33872	23	53	34.44	+05	43	18.0	16.8	9 675
1990	ST10	1990	09	16.37431	23	53	32.04	+05	43	20.7		9 675
1990	ST10	1990	09	19.40087	23	50	13.48	+05	47	37.1	16.5	9 675
1990	ST10	1990	09	19.42205	23	50	12.05	+05	47	38.2		9 675
1990	ST10	1990	09	20.33669	23	49	11.60	+05	48	44.4	16.5	9 675
1990	ST10	1990	09	20.36742	23	49	09.46	+05	48	47.6		9 675
1990	SU10*	1990	09	16.33872	23	55	35.30	+04	51	48.1	17.0	9 675
1990	SU10	1990	09	16.37431	23	55	33.54	+04	51	38.3		9 675
1990	SU10	1990	09	19.40087	23	53	06.03	+04	37	50.9	17.2	9 675
1990	SU10	1990	09	19.42205	23	53	04.95	+04	37	44.8		9 675
1990	SU10	1990	09	20.33669	23	52	20.20	+04	33	26.0	17.2	9 675
1990	SU10	1990	09	20.36742	23	52	18.59	+04	33	18.0		9 675
1990	SV10*	1990	09	16.33872	23	59	50.69	+03	18	14.2	17.2	9 675
1990	SV10	1990	09	16.37431	23	59	48.90	+03	17	59.5		9 675
1990	SV10	1990	09	18.30295	23	58	14.09	+03	04	41.2	17.5	9 675
1990	SV10	1990	09	18.33576	23	58	12.48	+03	04	27.3		9 675
1990	SV10	1990	09	19.40087	23	57	19.16	+02	57	00.8	17.8	9 675
1990	SV10	1990	09	19.42205	23	57	17.99	+02	56	52.0		9 675
1990	SW10*	1990	09	16.33872	00	03	44.94	+09	24	05.9	17.5	9 675
1990	SW10	1990	09	16.37431	00	03	43.63	+09	23	45.8		9 675
1990	SW10	1990	09	17.34774	00	03	10.76	+09	14	43.8	17.5	9 675
1990	SW10	1990	09	17.38385	00	03	09.39	+09	14	24.2		9 675
1990	SW10	1990	09	19.40087	00	01	59.81	+08	55	00.0	17.5	9 675
1990	SW10	1990	09	19.42205	00	01	59.05	+08	54	45.6		9 675
1990	SW10	1990	09	20.38590	00	01	25.36	+08	45	16.4	17.5	9 675
1990	SW10	1990	09	20.42083	00	01	23.95	+08	44	55.3		9 675
1990	SX10*	1990	09	16.33872	00	11	34.15	+10	15	29.3	17.0	9 675
1990	SX10	1990	09	16.37431	00	11	32.03	+10	15	23.8		9 675
1990	SX10	1990	09	17.34774	00	10	36.81	+10	13	00.5	17.2	9 675
1990	SX10	1990	09	17.38385	00	10	34.67	+10	12	54.7		9 675
1990	SX10	1990	09	19.40087	00	08	38.21	+10	07	20.3	17.2	9 675
1990	SX10	1990	09	19.42205	00	08	36.97	+10	07	14.8		9 675
1990	SX10	1990	09	20.38590	00	07	40.60	+10	04	20.6	17.2	9 675
1990	SX10	1990	09	20.42083	00	07	38.43	+10	04	13.7		9 675
1990	SY10*	1990	09	17.34774	00	02	14.89	+10	50	58.0	17.8	9 675
1990	SY10	1990	09	17.38385	00	02	13.42	+10	50	43.0		9 675
1990	SY10	1990	09	19.40087	00	00	53.63	+10	36	18.7	17.5	9 675
1990	SY10	1990	09	19.42205	00	00	52.82	+10	36	07.6		9 675
1990	SY10	1990	09	20.38590	00	00	14.49	+10	29	07.8	17.8	9 675
1990	SY10	1990	09	20.42083	00	00	13.03	+10	28	52.9		9 675

1990	SZ10	1990	09	18.30295	23	41	44.68	-02	20	59.3	17.5	9 675
1990	SZ10	1990	09	18.33576	23	41	42.63	-02	21	01.2		9 675
1990	SA11*	1990	09	16.33872	23	52	49.34	+08	11	00.4	17.5	9 675
1990	SA11	1990	09	16.37431	23	52	47.70	+08	10	50.2		9 675
1990	SA11	1990	09	18.29497	23	51	24.88	+08	02	01.6	17.5	9 675
1990	SA11	1990	09	18.32760	23	51	23.49	+08	01	52.5		9 675
1990	SA11	1990	09	19.40087	23	50	36.53	+07	56	42.3	17.5	9 675
1990	SA11	1990	09	19.42205	23	50	35.59	+07	56	36.7		9 675
1990	SB11*	1990	09	16.33872	23	54	30.32	+09	41	17.7	17.2	9 675
1990	SB11	1990	09	16.37431	23	54	28.29	+09	41	12.7		9 675
1990	SB11	1990	09	17.34774	23	53	37.28	+09	38	09.5	17.5	9 675
1990	SB11	1990	09	17.38385	23	53	35.25	+09	38	01.8		9 675
1990	SB11	1990	09	18.29497	23	52	47.24	+09	34	53.9	17.2	9 675
1990	SB11	1990	09	18.32760	23	52	45.47	+09	34	46.9		9 675
1990	SB11	1990	09	19.40087	23	51	47.98	+09	30	49.9	17.5	9 675
1990	SB11	1990	09	19.42205	23	51	46.79	+09	30	47.0		9 675
1990	SC11*	1990	09	16.33872	23	54	34.89	+08	16	27.9	17.5	9 675
1990	SC11	1990	09	16.37431	23	54	32.85	+08	16	05.8		9 675
1990	SC11	1990	09	18.29497	23	52	50.21	+07	57	36.7	17.8	9 675
1990	SC11	1990	09	18.32760	23	52	48.38	+07	57	16.9		9 675
1990	SC11	1990	09	19.40087	23	51	50.51	+07	46	41.5	17.8	9 675
1990	SC11	1990	09	19.42205	23	51	49.39	+07	46	28.6		9 675
1990	SD11*	1990	09	16.33872	23	55	02.57	+08	00	03.8	17.8	9 675
1990	SD11	1990	09	16.37431	23	55	00.06	+08	00	08.8		9 675
1990	SD11	1990	09	18.29497	23	52	48.28	+08	04	41.3	17.8	9 675
1990	SD11	1990	09	18.32760	23	52	46.00	+08	04	44.9		9 675
1990	SD11	1990	09	19.40087	23	51	31.91	+08	06	59.6	17.8	9 675
1990	SD11	1990	09	19.42205	23	51	30.43	+08	07	02.8		9 675
1990	SE11*	1990	09	17.34774	23	57	59.95	+11	00	34.0	17.2	9 675
1990	SE11	1990	09	17.38385	23	57	57.94	+11	00	29.0		9 675
1990	SE11	1990	09	18.29497	23	57	09.40	+10	58	20.7	17.2	9 675
1990	SE11	1990	09	18.32760	23	57	07.60	+10	58	15.7		9 675
1990	SE11	1990	09	20.38590	23	55	16.92	+10	52	57.8	17.5	9 675
1990	SE11	1990	09	20.42083	23	55	14.87	+10	52	52.3		9 675
1990	SF11	1990	09	14.33073	23	14	39.20	-02	37	42.9	17.2	9 675
1990	SF11	1990	09	14.36858	23	14	37.07	-02	37	54.1		9 675
1990	SF11*	1990	09	16.32031	23	12	51.38	-02	47	56.2	17.2	9 675
1990	SF11	1990	09	16.35712	23	12	49.40	-02	48	07.5		9 675
1990	SF11	1990	09	19.26892	23	10	13.87	-03	03	03.4	17.5	9 675
1990	SF11	1990	09	19.29653	23	10	12.42	-03	03	09.3		9 675
1990	SG11*	1990	09	16.32031	23	18	53.68	-01	36	47.1	17.2	9 675
1990	SG11	1990	09	16.35712	23	18	51.78	-01	37	03.1		9 675
1990	SG11	1990	09	19.26892	23	16	30.52	-01	57	19.9	17.0	9 675
1990	SG11	1990	09	19.29653	23	16	29.18	-01	57	30.2		9 675
1990	SH11*	1990	09	16.32031	23	23	32.92	+02	07	03.7	17.5	9 675
1990	SH11	1990	09	16.35712	23	23	30.88	+02	06	42.9		9 675
1990	SH11	1990	09	19.26892	23	20	53.72	+01	39	21.3	17.2	9 675
1990	SH11	1990	09	19.29653	23	20	52.18	+01	39	05.8		9 675
1990	SJ11*	1990	09	16.32031	23	25	22.92	-00	23	32.6	17.5	9 675
1990	SJ11	1990	09	16.35712	23	25	20.98	-00	23	40.4		9 675
1990	SJ11	1990	09	19.26892	23	23	00.31	-00	33	11.2	17.5	9 675
1990	SJ11	1990	09	19.29653	23	22	58.88	-00	33	16.3		9 675
1990	SK11*	1990	09	16.33872	00	01	55.84	+05	23	33.4	17.0	9 675
1990	SK11	1990	09	16.37431	00	01	53.88	+05	23	22.2		9 675
1990	SK11	1990	09	19.40087	23	59	11.05	+05	07	20.1	17.0	9 675
1990	SK11	1990	09	19.42205	23	59	09.87	+05	07	12.4		9 675
1990	SL11*	1990	09	16.33872	00	01	56.66	+05	08	27.9	16.2	9 675
1990	SL11	1990	09	16.37431	00	01	54.54	+05	08	24.1		9 675
1990	SL11	1990	09	19.40087	23	59	04.62	+05	03	05.2	16.2	9 675

1990	SL11	1990	09	19.42205	23	59	03.43	+05	03	02.1		9 675
1990	SM11*	1990	09	16.33872	00	04	47.38	+08	20	45.7	17.8	9 675
1990	SM11	1990	09	16.37431	00	04	45.27	+08	20	28.0		9 675
1990	SM11	1990	09	19.40087	00	02	05.05	+07	55	47.2	17.8	9 675
1990	SM11	1990	09	19.42205	00	02	03.98	+07	55	36.0		9 675
1990	SN11*	1990	09	16.33872	00	07	09.79	+06	40	50.3	17.5	9 675
1990	SN11	1990	09	16.37431	00	07	08.00	+06	40	31.6		9 675
1990	SN11	1990	09	19.40087	00	04	44.53	+06	14	20.7	17.5	9 675
1990	SN11	1990	09	19.42205	00	04	43.43	+06	14	08.2		9 675
1990	SO11*	1990	09	16.33872	00	08	13.18	+08	18	32.3	17.5	9 675
1990	SO11	1990	09	16.37431	00	08	11.51	+08	18	28.3		9 675
1990	SO11	1990	09	19.40087	00	05	51.66	+08	11	59.6	17.5	9 675
1990	SO11	1990	09	19.42205	00	05	50.58	+08	11	53.4		9 675
1990	SP11*	1990	09	16.33872	00	16	21.19	+06	57	05.5	17.2	9 675
1990	SP11	1990	09	16.37431	00	16	19.22	+06	56	56.7		9 675
1990	SP11	1990	09	19.40087	00	13	41.41	+06	43	35.3	17.5	9 675
1990	SP11	1990	09	19.42205	00	13	40.22	+06	43	28.8		9 675
1990	SQ11*	1990	09	16.33872	00	20	05.20	+06	53	58.4	17.5	9 675
1990	SQ11	1990	09	16.37431	00	20	03.58	+06	53	47.8		9 675
1990	SQ11	1990	09	19.40087	00	17	44.47	+06	39	16.2	17.8	9 675
1990	SQ11	1990	09	19.42205	00	17	43.47	+06	39	09.6		9 675
1990	SR11*	1990	09	17.29722	23	33	01.00	+15	48	38.5	17.5	9 675
1990	SR11	1990	09	17.33108	23	32	58.99	+15	48	35.5		9 675
1990	SR11	1990	09	19.38021	23	31	00.34	+15	45	23.3	17.5	9 675
1990	SR11	1990	09	19.40764	23	30	58.66	+15	45	19.7		9 675
1990	SS11*	1990	09	17.29722	23	33	55.84	+14	45	24.2	17.0	9 675
1990	SS11	1990	09	17.33108	23	33	54.17	+14	45	10.3		9 675
1990	SS11	1990	09	19.38021	23	32	18.02	+14	30	54.1	17.8	9 675
1990	ST11*	1990	09	17.29722	23	36	52.84	+16	01	45.8	17.8	9 675
1990	ST11	1990	09	17.33108	23	36	51.28	+16	01	30.4		9 675
1990	ST11	1990	09	19.38021	23	35	22.51	+15	45	59.0	17.8	9 675
1990	ST11	1990	09	19.40764	23	35	21.22	+15	45	45.3		9 675
1990	SU11*	1990	09	17.29722	23	41	59.38	+15	27	05.8	17.5	9 675
1990	SU11	1990	09	17.33108	23	41	57.89	+15	26	52.3		9 675
1990	SU11	1990	09	19.38021	23	40	30.90	+15	13	13.8	17.5	9 675
1990	SU11	1990	09	19.40764	23	40	29.70	+15	13	02.0		9 675
1990	SV11*	1990	09	17.29722	23	47	33.29	+16	09	50.9	17.5	9 675
1990	SV11	1990	09	17.33108	23	47	31.87	+16	09	36.9		9 675
1990	SV11	1990	09	19.38021	23	46	08.95	+15	55	08.7	17.5	9 675
1990	SV11	1990	09	19.40764	23	46	07.81	+15	54	56.6		9 675
1990	SW11*	1990	09	17.34774	23	51	02.79	+15	08	01.5	17.2	9 675
1990	SW11	1990	09	17.38385	23	51	01.14	+15	07	08.0		9 675
1990	SW11	1990	09	20.38590	23	48	55.88	+13	52	01.9	17.5	9 675
1990	SW11	1990	09	20.42083	23	48	54.29	+13	51	10.5		9 675
1990	SX11*	1990	09	17.34774	00	03	31.12	+13	14	03.8	17.8	9 675
1990	SX11	1990	09	17.38385	00	03	28.86	+13	14	05.0		9 675
1990	SX11	1990	09	20.38590	00	00	25.19	+13	13	13.1	17.8	9 675
1990	SX11	1990	09	20.42083	00	00	22.94	+13	13	13.4		9 675
1990	SY11*	1990	09	17.34774	00	03	58.55	+13	59	22.9	17.5	9 675
1990	SY11	1990	09	17.38385	00	03	56.32	+13	59	16.4		9 675
1990	SY11	1990	09	20.38590	00	01	01.45	+13	52	52.3	17.8	9 675
1990	SY11	1990	09	20.42083	00	00	59.24	+13	52	49.1		9 675
1990	SZ11*	1990	09	17.34774	00	07	26.23	+15	42	33.7	17.8	9 675
1990	SZ11	1990	09	17.38385	00	07	23.97	+15	42	39.5		9 675
1990	SZ11	1990	09	20.38590	00	04	20.05	+15	47	32.0	17.5	9 675
1990	SZ11	1990	09	20.42083	00	04	17.84	+15	47	37.5		9 675
1990	SA12*	1990	09	17.34774	00	11	32.07	+14	46	48.5	17.5	9 675
1990	SA12	1990	09	17.38385	00	11	30.48	+14	46	38.8		9 675
1990	SA12	1990	09	20.38590	00	09	15.14	+14	30	55.2	17.5	9 675

1990	SA12	1990	09	20.42083	00	09	13.38	+14	30	46.2		9 675
1990	SB12*	1990	09	17.34774	00	12	33.74	+12	12	41.1	17.5	9 675
1990	SB12	1990	09	17.38385	00	12	31.72	+12	12	37.3		9 675
1990	SB12	1990	09	20.38590	00	09	47.86	+12	06	32.1	17.5	9 675
1990	SB12	1990	09	20.42083	00	09	45.81	+12	06	29.0		9 675
1990	SC12*	1990	09	17.34774	00	19	39.42	+13	07	26.0	17.8	9 675
1990	SC12	1990	09	17.38385	00	19	37.08	+13	07	29.8		9 675
1990	SC12	1990	09	20.38590	00	16	25.76	+13	11	33.5	17.8	9 675
1990	SC12	1990	09	20.42083	00	16	23.41	+13	11	36.8		9 675
1990	SE12*	1990	09	18.29497	23	47	23.64	+07	29	36.5	17.5	9 675
1990	SE12	1990	09	18.32760	23	47	22.04	+07	29	20.7		9 675
1990	SE12	1990	09	20.33669	23	45	45.38	+07	12	33.8	17.2	9 675
1990	SE12	1990	09	20.36742	23	45	43.75	+07	12	18.6		9 675
1990	SF12*	1990	09	19.26892	23	25	41.00	+02	04	45.7	17.5	9 675
1990	SF12	1990	09	19.29653	23	25	38.98	+02	04	47.6		9 675
1990	SF12	1990	09	20.33669	23	24	29.55	+02	06	32.4	17.5	9 675
1990	SF12	1990	09	20.36742	23	24	27.46	+02	06	35.1		9 675
1990	SG12*	1990	09	19.40087	23	54	49.80	+04	16	38.8	17.5	9 675
1990	SG12	1990	09	19.42205	23	54	48.83	+04	16	30.3		9 675
1990	SG12	1990	09	20.33669	23	54	09.05	+04	09	47.8	17.2	9 675
1990	SG12	1990	09	20.36742	23	54	07.61	+04	09	35.1		9 675
1990	TF	1990	09	16.32031	23	01	42.99	+01	13	15.9	16.5	9 675
1990	TF	1990	09	16.35712	23	01	40.68	+01	13	21.0		9 675
1990	TF	1990	09	19.26892	22	58	44.13	+01	17	11.4	16.8	9 675
1990	TF	1990	09	19.29653	22	58	42.34	+01	17	13.4		9 675
1990	TQ	1990	08	24.45052	00	45	45.02	+02	51	42.4	17.5	9 675
1990	TQ	1990	08	24.48646	00	45	45.02	+02	51	58.5		9 675
1990	TQ	1990	09	15.38090	00	38	16.30	+05	07	36.3	17.0	9 675
1990	TQ	1990	09	17.35573	00	36	47.17	+05	17	02.7	17.5	9 675
1990	TQ	1990	09	17.39166	00	36	45.36	+05	17	13.2		9 675
1990	TO1	1990	10	21.22396	23	54	05.29	+24	15	45.4	15.8	3 675
1990	TO1	1990	10	23.22083	23	53	31.65	+23	26	05.9		3 675
1990	TR1	1990	11	18.23542	01	38	00.20	+03	50	26.0	16.7	2 675
1990	TR1	1990	11	18.26319	01	37	59.09	+03	50	18.0		2 675
1990	TK3	1990	11	11.27899	02	23	42.66	+21	27	33.5	16.8	9 675
1990	TK3	1990	11	11.31111	02	23	40.18	+21	27	41.9		9 675
1990	TK3	1990	11	13.26250	02	21	16.01	+21	36	42.3	16.2	9 675
1990	TK3	1990	11	13.30052	02	21	13.11	+21	36	52.5		9 675
1990	TG5	1990	09	16.32031	22	58	58.57	+00	37	09.8	16.8	9 675
1990	TG5	1990	09	16.35712	22	58	56.47	+00	37	00.5		9 675
1990	TG5	1990	09	19.26892	22	56	23.05	+00	25	39.3	17.0	9 675
1990	TG5	1990	09	19.29653	22	56	21.47	+00	25	32.8		9 675
1990	TG5	1990	09	20.26991	22	55	31.74	+00	21	40.2	17.2	9 675
1990	TG5	1990	09	20.30463	22	55	29.86	+00	21	31.7		9 675
1990	TK5	1990	09	16.32031	23	00	30.91	+03	02	00.2	16.5	9 675
1990	TK5	1990	09	16.35712	23	00	29.23	+03	01	38.8		9 675
1990	TK5	1990	09	19.26892	22	58	20.85	+02	34	41.0	17.0	9 675
1990	TK5	1990	09	19.29653	22	58	19.51	+02	34	24.9		9 675
1990	TB6	1990	09	15.31146	22	59	17.19	-02	16	59.3	17.2	9 675
1990	TB6	1990	09	15.34701	22	59	14.96	-02	17	02.9		9 675
1990	TB6	1990	09	20.26991	22	54	24.94	-02	23	43.7	17.5	9 675
1990	TB6	1990	09	20.30463	22	54	22.85	-02	23	45.1		9 675
1990	TF6	1990	08	22.40318	23	26	00.75	+00	22	16.9	18.2	9 675
1990	TF6	1990	08	22.44363	23	25	58.98	+00	22	23.6		9 675
1990	TF6	1990	09	16.32031	23	02	56.29	+00	39	34.3	17.5	9 675
1990	TF6	1990	09	16.35712	23	02	53.92	+00	39	32.9		9 675
1990	TF6	1990	09	19.26892	22	59	54.95	+00	38	06.9	17.5	9 675
1990	TF6	1990	09	19.29653	22	59	53.16	+00	38	06.4		9 675
1990	TL6	1990	09	15.31146	22	58	43.22	-00	19	04.0	16.5	9 675

1990	TL6		1990	09	15.34701	22	58	41.17	-00	19	10.4		9 675
1990	TL6		1990	09	16.32031	22	57	49.37	-00	22	08.3	16.5	9 675
1990	TL6		1990	09	16.35712	22	57	47.32	-00	22	15.7		9 675
1990	TL6		1990	09	20.26991	22	54	27.29	-00	34	29.9	16.8	9 675
1990	TL6		1990	09	20.30463	22	54	25.35	-00	34	35.0		9 675
1990	TW7		1990	11	11.27899	02	18	33.71	+15	41	21.1	17.5	9 675
1990	TW7		1990	11	11.31111	02	18	31.75	+15	41	21.1		9 675
1990	TG8		1990	11	11.27899	02	19	14.82	+15	51	46.0	17.5	9 675
1990	TG8		1990	11	11.31111	02	19	12.75	+15	51	48.4		9 675
1990	TG8		1990	11	13.26250	02	17	12.01	+15	55	40.5	17.2	9 675
1990	TG8		1990	11	13.30052	02	17	09.61	+15	55	45.8		9 675
1990	UY		1990	12	15.24201	02	26	06.73	+00	28	47.3	16.5	2 675
1990	UY		1990	12	15.27431	02	26	06.22	+00	28	50.1		2 675
1990	UY		1990	12	18.15521	02	25	39.57	+00	34	03.9		2 675
1990	UY		1990	12	18.17865	02	25	39.49	+00	34	06.2		2 675
1990	UD1		1990	11	13.26250	02	40	48.54	+20	28	20.8	17.8	9 675
1990	UD1		1990	11	13.30052	02	40	46.33	+20	28	10.1		9 675
1990	UR1		1990	11	13.23125	01	16	24.19	+20	59	35.4	15.8	3 675
1990	UR1		1990	11	15.18993	01	16	27.15	+19	59	52.9		3 675
1990	UG2		1990	12	15.24201	02	24	20.56	+00	14	58.3	16.5	2 675
1990	UG2		1990	12	15.27431	02	24	19.99	+00	15	06.8		2 675
1990	UG2		1990	12	18.15521	02	23	46.74	+00	30	37.6		2 675
1990	UG2		1990	12	18.17865	02	23	46.61	+00	30	46.2		2 675
1990	UO2		1990	11	13.23125	01	24	25.28	+24	42	54.6	15.7	3 675
1990	UO2		1990	11	15.18160	01	24	09.73	+23	49	15.5		3 675
1990	UB3		1990	11	11.27899	02	39	50.66	+19	32	36.5	17.2	9 675
1990	UB3		1990	11	11.31111	02	39	48.58	+19	32	30.1		9 675
1990	UB3		1990	11	13.26250	02	37	44.94	+19	25	05.6	17.2	9 675
1990	UB3		1990	11	13.30052	02	37	42.35	+19	24	56.4		9 675
1990	VX2		1990	11	11.32864	04	20	32.99	+25	47	15.8	15.8	9 675
1990	VX2		1990	11	11.37222	04	20	29.36	+25	48	15.0		9 675
1990	VX2		1990	11	12.38368	04	19	09.32	+26	10	57.6	15.5	9 675
1990	VX2		1990	11	13.41719	04	17	44.54	+26	34	13.8	15.5	9 675
1990	VD3		1990	11	13.26250	02	40	13.65	+20	03	40.7	17.8	9 675
1990	VD3		1990	11	13.30052	02	40	11.24	+20	03	26.9		9 675
1990	VZ6	*	1990	11	11.32864	04	34	06.66	+30	27	21.2	17.2	9 675
1990	VZ6		1990	11	11.37222	04	34	04.35	+30	27	28.4		9 675
1990	VZ6		1990	11	12.38368	04	33	16.73	+30	30	22.8	17.5	9 675
1990	VZ6		1990	11	13.41719	04	32	26.60	+30	33	12.9	16.8	9 675
1990	VB7	*	1990	11	12.27100	05	23	56.50	+24	05	37.0	18.5	9 675
1990	VB7		1990	11	12.33237	05	23	54.25	+24	05	35.8		9 675
1990	VB7		1990	11	14.49010	05	22	36.51	+24	04	57.0	17.8	9 675
1990	VB7		1990	11	14.52048	05	22	35.35	+24	04	55.6		9 675
1990	VC7	*	1990	11	12.33237	05	02	25.16	+24	23	00.8	17.5	9 675
1990	VC7		1990	11	14.52048	05	00	35.52	+23	48	15.1	17.0	9 675
1990	VH7		1990	10	25.48003	03	53	41.73	+30	09	20.4	17.7	3 675
1990	VH7		1990	10	25.52743	03	53	40.39	+30	09	17.7		3 675
1990	VH7	*	1990	11	13.34131	03	43	35.65	+29	33	27.7	17.5	3 675
1990	VH7		1990	11	14.39461	03	42	58.15	+29	30	45.4		3 675
1990	VH7		1990	11	16.46944	03	41	44.15	+29	25	09.7		3 675
1990	VJ7		1990	11	11.27899	02	10	30.11	+20	37	56.0	17.8	9 675
1990	VJ7		1990	11	11.31111	02	10	28.71	+20	37	47.3		9 675
1990	VJ7	*	1990	11	13.26250	02	09	03.83	+20	27	05.8	18.0	9 675
1990	VJ7		1990	11	13.30052	02	09	02.06	+20	26	52.9		9 675
1990	VK7		1990	11	11.27899	02	11	32.34	+20	57	46.3	17.8	9 675
1990	VK7		1990	11	11.31111	02	11	30.78	+20	57	32.7		9 675
1990	VK7	*	1990	11	13.26250	02	09	59.25	+20	42	37.7	17.8	9 675
1990	VK7		1990	11	13.30052	02	09	57.38	+20	42	20.4		9 675
1990	VL7		1990	11	11.27899	02	12	33.86	+18	37	39.4	17.5	9 675

1990	VL7		1990	11	11.31111	02	12	32.25	+18	37	27.7		9 675
1990	VL7	*	1990	11	13.26250	02	10	59.49	+18	25	33.6	17.5	9 675
1990	VL7		1990	11	13.30052	02	10	57.64	+18	25	18.8		9 675
1990	VM7		1990	11	11.27899	02	15	24.04	+20	46	44.6	17.5	9 675
1990	VM7		1990	11	11.31111	02	15	20.53	+20	47	05.0		9 675
1990	VM7	*	1990	11	13.26250	02	11	53.72	+21	08	41.7	17.8	9 675
1990	VM7		1990	11	13.30052	02	11	49.48	+21	09	06.8		9 675
1990	VN7		1990	11	11.27899	02	13	41.10	+23	13	55.5	17.5	9 675
1990	VN7		1990	11	11.31111	02	13	39.51	+23	13	30.4		9 675
1990	VN7	*	1990	11	13.26250	02	12	12.75	+22	48	45.7	17.5	9 675
1990	VN7		1990	11	13.30052	02	12	10.94	+22	48	18.6		9 675
1990	VO7		1990	11	11.27899	02	13	33.18	+23	13	32.0	16.8	9 675
1990	VO7		1990	11	11.31111	02	13	31.70	+23	13	05.3		9 675
1990	VO7	*	1990	11	13.26250	02	12	15.72	+22	46	41.2	16.8	9 675
1990	VO7		1990	11	13.30052	02	12	14.12	+22	46	11.0		9 675
1990	VP7		1990	11	11.27899	02	17	27.32	+19	01	44.2	17.5	9 675
1990	VP7		1990	11	11.31111	02	17	25.39	+19	01	35.7		9 675
1990	VP7	*	1990	11	13.26250	02	15	36.62	+18	52	29.6	17.5	9 675
1990	VP7		1990	11	13.30052	02	15	34.39	+18	52	18.1		9 675
1990	VQ7		1990	11	11.27899	02	17	43.43	+20	02	33.4	17.5	9 675
1990	VQ7		1990	11	11.31111	02	17	41.48	+20	02	33.9		9 675
1990	VQ7	*	1990	11	13.26250	02	15	52.54	+20	02	57.9	17.5	9 675
1990	VQ7		1990	11	13.30052	02	15	50.28	+20	02	57.3		9 675
1990	VR7		1990	11	11.27899	02	18	18.87	+19	53	18.5	17.2	9 675
1990	VR7		1990	11	11.31111	02	18	16.82	+19	53	15.9		9 675
1990	VR7	*	1990	11	13.26250	02	16	24.06	+19	51	22.0	17.0	9 675
1990	VR7		1990	11	13.30052	02	16	21.75	+19	51	18.8		9 675
1990	VS7		1990	11	11.27899	02	18	36.66	+19	10	53.9	17.8	9 675
1990	VS7		1990	11	11.31111	02	18	34.74	+19	10	39.2		9 675
1990	VS7	*	1990	11	13.26250	02	16	53.34	+18	57	28.0	17.8	9 675
1990	VS7		1990	11	13.30052	02	16	51.22	+18	57	11.7		9 675
1990	VT7		1990	11	11.27899	02	21	11.16	+18	10	26.3	18.0	9 675
1990	VT7		1990	11	11.31111	02	21	09.44	+18	10	16.4		9 675
1990	VT7	*	1990	11	13.26250	02	19	30.94	+18	00	52.4	17.8	9 675
1990	VT7		1990	11	13.30052	02	19	28.95	+18	00	42.7		9 675
1990	VU7		1990	11	11.27899	02	21	50.34	+17	50	30.4	17.5	9 675
1990	VU7		1990	11	11.31111	02	21	48.80	+17	50	16.6		9 675
1990	VU7	*	1990	11	13.26250	02	20	20.45	+17	36	36.6	17.2	9 675
1990	VU7		1990	11	13.30052	02	20	18.65	+17	36	19.3		9 675
1990	VV7		1990	11	11.27899	02	22	00.53	+21	51	59.3	17.5	9 675
1990	VV7		1990	11	11.31111	02	21	58.85	+21	51	39.1		9 675
1990	VV7	*	1990	11	13.26250	02	20	22.81	+21	31	31.9	17.5	9 675
1990	VV7		1990	11	13.30052	02	20	20.86	+21	31	08.3		9 675
1990	VW7		1990	11	11.27899	02	22	33.63	+20	04	55.7	18.0	9 675
1990	VW7		1990	11	11.31111	02	22	31.52	+20	04	44.9		9 675
1990	VW7	*	1990	11	13.26250	02	20	34.21	+19	54	03.0	18.2	9 675
1990	VW7		1990	11	13.30052	02	20	31.81	+19	53	48.5		9 675
1990	VX7		1990	11	11.27899	02	22	16.04	+20	35	57.6	17.5	9 675
1990	VX7		1990	11	11.31111	02	22	14.61	+20	35	40.8		9 675
1990	VX7	*	1990	11	13.26250	02	20	51.96	+20	20	09.0	17.2	9 675
1990	VX7		1990	11	13.30052	02	20	50.30	+20	19	50.3		9 675
1990	VY7		1990	11	11.27899	02	23	19.22	+18	10	41.1	17.5	9 675
1990	VY7		1990	11	11.31111	02	23	17.21	+18	10	27.8		9 675
1990	VY7	*	1990	11	13.26250	02	21	22.55	+17	56	17.4	17.8	9 675
1990	VY7		1990	11	13.30052	02	21	20.23	+17	55	59.9		9 675
1990	VZ7		1990	11	11.27899	02	25	45.31	+23	13	17.1	18.0	9 675
1990	VZ7		1990	11	11.31111	02	25	43.51	+23	13	15.3		9 675
1990	VZ7	*	1990	11	13.26250	02	23	50.65	+23	09	59.9	17.8	9 675
1990	VZ7		1990	11	13.30052	02	23	48.41	+23	09	56.1		9 675

1990	VA8		1990	11	11.27899	02	26	29.46	+17	33	12.2	17.5	9 675
1990	VA8		1990	11	11.31111	02	26	27.96	+17	32	50.9		9 675
1990	VA8	*	1990	11	13.26250	02	25	04.53	+17	12	08.7	17.2	9 675
1990	VA8		1990	11	13.30052	02	25	02.82	+17	11	43.8		9 675
1990	VB8		1990	11	11.27899	02	28	56.85	+20	28	36.3	17.2	9 675
1990	VB8		1990	11	11.31111	02	28	55.12	+20	28	21.2		9 675
1990	VB8	*	1990	11	13.26250	02	27	12.54	+20	13	40.9	17.5	9 675
1990	VB8		1990	11	13.30052	02	27	10.49	+20	13	23.0		9 675
1990	VC8		1990	11	11.27899	02	28	57.84	+16	57	53.7	17.5	9 675
1990	VC8		1990	11	11.31111	02	28	56.17	+16	57	42.8		9 675
1990	VC8	*	1990	11	13.26250	02	27	15.81	+16	48	36.4	18.0	9 675
1990	VC8		1990	11	13.30052	02	27	13.84	+16	48	26.9		9 675
1990	VD8		1990	11	11.27899	02	30	32.44	+21	18	29.8	17.2	9 675
1990	VD8		1990	11	11.31111	02	30	30.82	+21	18	18.3		9 675
1990	VD8	*	1990	11	13.26250	02	28	59.36	+21	07	02.3	17.2	9 675
1990	VD8		1990	11	13.30052	02	28	57.45	+21	06	48.0		9 675
1990	VE8		1990	11	11.27899	02	30	35.04	+21	27	26.6	17.8	9 675
1990	VE8		1990	11	11.31111	02	30	34.05	+21	27	18.6		9 675
1990	VE8	*	1990	11	13.26250	02	29	35.22	+21	19	08.6	17.5	9 675
1990	VE8		1990	11	13.30052	02	29	34.05	+21	18	58.4		9 675
1990	VF8		1990	11	11.27899	02	32	08.81	+20	05	17.6	17.5	9 675
1990	VF8		1990	11	11.31111	02	32	06.79	+20	05	15.1		9 675
1990	VF8	*	1990	11	13.26250	02	30	11.18	+20	03	07.1	17.5	9 675
1990	VF8		1990	11	13.30052	02	30	08.83	+20	03	03.6		9 675
1990	VG8		1990	11	11.27899	02	32	45.14	+22	54	26.7	17.2	9 675
1990	VG8		1990	11	11.31111	02	32	43.23	+22	54	16.3		9 675
1990	VG8	*	1990	11	13.26250	02	30	48.52	+22	43	34.5	17.5	9 675
1990	VG8		1990	11	13.30052	02	30	46.14	+22	43	21.0		9 675
1990	VH8		1990	11	11.27899	02	33	08.49	+17	32	13.2	17.5	9 675
1990	VH8		1990	11	11.31111	02	33	06.85	+17	31	59.7		9 675
1990	VH8	*	1990	11	13.26250	02	31	36.61	+17	18	31.0	17.8	9 675
1990	VH8		1990	11	13.30052	02	31	34.65	+17	18	15.3		9 675
1990	WA		1990	12	17.32604	05	54	15.19	+49	29	56.8	15.5	2 675
1990	WA		1990	12	17.37569	05	54	11.33	+49	33	09.7		2 675
1990	WA		1990	12	18.36024	05	53	04.60	+50	36	34.4		2 675
1990	WA		1990	12	18.38003	05	53	02.97	+50	37	50.0		2 675
1990	WK2		1990	12	15.10694	01	31	09.13	+26	32	34.5	16.3	2 675
1990	WK2		1990	12	15.17726	01	31	10.66	+26	32	04.1		2 675
1990	WK2		1990	12	17.12118	01	31	57.81	+26	16	56.6		2 675
1990	WK2		1990	12	17.14583	01	31	58.17	+26	16	46.4		2 675
1990	WM2		1990	11	12.27100	05	03	10.87	+20	55	41.9	16.5	9 675
1990	WM2		1990	11	14.49010	05	01	46.53	+20	33	29.9	16.8	9 675
1990	WM2		1990	11	14.52048	05	01	45.23	+20	33	11.9		9 675
1990	WW2		1990	11	18.45417	06	06	39.90	+15	37	28.3	15.5	2 675
1990	WW2		1990	11	18.48056	06	06	38.82	+15	37	42.8		2 675
1990	WW2		1990	11	21.32031	06	04	40.44	+16	03	21.0		2 675
1990	WW2		1990	11	21.34306	06	04	39.22	+16	03	34.9		2 675
1990	WZ2		1990	12	15.15712	23	50	22.94	+29	20	08.2	16.0	2 675
1990	WZ2		1990	12	17.10191	23	52	53.42	+29	42	47.6		2 675
1990	WZ2		1990	12	17.12760	23	52	55.55	+29	43	06.4		2 675
1990	WC3	*	1990	11	18.45417	05	52	01.10	+18	50	18.0	16.0	2 675
1990	WC3		1990	11	18.48056	05	51	59.75	+18	50	21.3		2 675
1990	WC3		1990	11	21.32031	05	49	45.85	+18	53	06.3		2 675
1990	WC3		1990	11	21.34306	05	49	44.65	+18	53	09.1		2 675
1990	WD3	*	1990	11	18.17135	00	25	19.40	-14	44	21.9	16.8	2 675
1990	WD3		1990	11	18.19601	00	25	19.64	-14	43	55.2		2 675
1990	WD3		1990	11	19.14896	00	25	30.89	-14	27	36.0		2 675
1990	XJ	*	1990	12	15.20660	02	01	45.63	+26	23	04.8	16.3	2 675
1990	XJ		1990	12	15.22795	02	01	47.47	+26	21	47.7		2 675

1990	XJ		1990	12	16.08576	02	03	20.78	+25	30	03.7	2 675
1990	XJ		1990	12	16.16198	02	03	28.27	+25	25	31.0	2 675
1990	XJ		1990	12	18.13715	02	06	58.80	+23	31	36.6	2 675
1990	XJ		1990	12	18.16085	02	07	01.22	+23	30	16.0	2 675
1990	XJ		1990	12	19.21997	02	08	52.81	+22	32	03.4	2 675
1990	XJ		1990	12	19.24340	02	08	55.10	+22	30	47.6	2 675
1990	XW	*	1990	12	15.26007	03	52	24.57	+39	51	10.3	15.5 2 675
1990	XW		1990	12	15.28802	03	52	21.73	+39	51	23.6	2 675
1990	XW		1990	12	18.19306	03	47	48.49	+40	12	55.6	2 675
1990	XW		1990	12	18.21337	03	47	46.56	+40	13	02.9	2 675
1990	XZ		1990	11	18.34149	04	31	11.92	+30	56	42.0	16.0 2 675
1990	XZ		1990	11	18.36892	04	31	09.01	+30	57	12.4	2 675
1990	XZ	*	1990	12	15.26007	03	39	51.10	+37	10	05.5	16.0 2 675
1990	XZ		1990	12	15.28802	03	39	48.20	+37	10	20.1	2 675
1990	XZ		1990	12	18.19306	03	35	16.85	+37	33	33.3	2 675
1990	XZ		1990	12	18.21337	03	35	15.06	+37	33	41.0	2 675
1990	XA1	*	1990	12	14.47118	08	03	16.07	+19	41	59.9	14.7 2 675
1990	XA1		1990	12	14.49809	08	03	15.41	+19	41	52.1	2 675
1990	XA1		1990	12	17.43958	08	01	58.43	+19	28	17.8	2 675
1990	XA1		1990	12	17.46597	08	01	57.55	+19	28	10.7	2 675
1990	XB1	*	1990	12	14.49097	08	35	29.06	+26	22	12.6	14.5 2 675
1990	XB1		1990	12	14.52465	08	35	28.61	+26	22	27.4	2 675
1990	XB1		1990	12	17.52326	08	34	48.40	+26	46	08.8	2 675
1990	XB1		1990	12	17.54253	08	34	48.02	+26	46	17.2	2 675
1990	YA	*	1990	12	18.14288	01	39	04.06	+13	54	04.5	16.5 2 675
1990	YA		1990	12	18.16684	01	39	05.16	+13	54	04.8	2 675
1990	YA		1990	12	19.16962	01	39	54.19	+13	54	07.0	2 675
1990	YA		1990	12	19.18976	01	39	55.14	+13	54	07.6	2 675
1990	YM		1990	12	14.53299	08	45	35.21	+20	09	35.1	15.3 2 675
1990	YM		1990	12	14.55712	08	45	35.85	+20	10	04.9	2 675
1990	YM		1990	12	17.51615	08	46	42.30	+21	07	51.4	2 675
1990	YM		1990	12	17.53628	08	46	42.56	+21	08	16.2	2 675
1990	YV	*	1990	12	18.24132	04	21	08.20	+04	50	35.0	16.5 2 675
1990	YV		1990	12	18.26042	04	21	07.28	+04	50	33.2	2 675
1990	YV		1990	12	19.22569	04	20	30.23	+04	49	52.0	2 675
1990	YV		1990	12	19.24965	04	20	29.40	+04	49	50.8	2 675
1990	YW	*	1990	12	18.24132	04	23	31.01	+05	01	17.7	16.5 2 675
1990	YW		1990	12	18.26042	04	23	30.23	+05	01	14.4	2 675
1990	YW		1990	12	19.22569	04	22	53.35	+04	58	47.7	2 675
1990	YW		1990	12	19.24965	04	22	52.39	+04	58	45.7	2 675
2017	P-L		1990	09	19.40087	00	19	42.72	+07	24	55.6	17.5 9 675
2017	P-L		1990	09	19.42205	00	19	41.61	+07	24	48.3	9 675
2541	P-L	*	1960	09	24.46184	00	56	59.83	+05	14	39.0	17.6 4 675
2541	P-L		1960	09	28.43822	00	53	48.95	+04	58	11.6	4 675
2541	P-L		1960	09	29.39514	00	53	01.55	+04	54	05.2	4 675
2541	P-L		1960	10	22.26809	00	34	54.70	+03	22	08.6	4 675
2541	P-L		1960	10	25.30351	00	33	08.67	+03	13	53.6	4 675
2541	P-L		1960	10	26.35766	00	32	35.17	+03	11	25.4	4 675
2642	P-L	*	1960	09	24.46184	00	57	34.01	+04	25	06.3	18.0 4 675
2642	P-L		1960	09	26.37988	00	55	52.84	+04	08	09.1	4 675
2642	P-L		1960	09	28.43822	00	54	01.58	+03	49	44.1	4 675
2642	P-L		1960	09	29.39514	00	53	09.51	+03	41	09.2	4 675
2642	P-L		1960	10	22.26809	00	33	03.76	+00	28	18.5	4 675
2642	P-L		1960	10	25.30351	00	30	53.32	+00	07	34.7	4 675
2642	P-L		1960	10	26.35766	00	30	10.63	+00	00	46.8	4 675
3535	P-L		1990	09	15.33698	23	33	17.67	+03	14	10.4	16.5 9 675
3535	P-L		1990	09	15.37274	23	33	15.24	+03	14	06.9	9 675
3535	P-L		1990	09	20.33669	23	27	49.97	+03	05	58.1	16.5 9 675
3535	P-L		1990	09	20.36742	23	27	48.03	+03	05	56.8	9 675

4024	P-L	*	1960	09	24.37573	00	18	04.85	+07	33	02.4	17.8	4 675
4024	P-L		1960	09	25.42780	00	17	11.36	+07	27	49.4		4 675
4024	P-L		1960	09	26.30558	00	16	27.03	+07	23	23.1		4 675
4024	P-L		1960	09	28.36808	00	14	42.09	+07	12	44.0		4 675
4024	P-L		1960	10	17.27085	00	00	26.47	+05	31	51.1		4 675
4024	P-L		1960	10	22.22293	23	57	44.29	+05	08	23.3		4 675
4024	P-L		1960	10	24.35836	23	56	45.11	+04	59	07.4		4 675
4024	P-L		1960	10	26.32573	23	55	57.21	+04	51	04.3		4 675
4668	P-L	*	1960	09	26.31530	00	35	39.84	-01	49	52.1	18.3	4 675
4668	P-L		1960	09	27.40836	00	34	33.43	-01	52	29.7		4 675
4668	P-L		1960	09	28.39725	00	33	33.24	-01	54	50.7		4 675
4668	P-L		1960	10	22.23406	00	11	03.03	-02	23	02.1		4 675
4668	P-L		1960	10	25.25350	00	08	54.23	-02	20	56.8		4 675
4668	P-L		1960	10	26.31531	00	08	12.35	-02	19	50.6		4 675
6067	P-L	*	1960	09	24.33613	23	54	06.90	+02	27	05.5	18.6	4 675
6067	P-L		1960	09	25.32502	23	53	26.28	+02	21	03.0		4 675
6067	P-L		1960	09	26.27573	23	52	47.34	+02	15	13.5		4 675
6067	P-L		1960	09	28.32780	23	51	23.91	+02	02	39.1		4 675
6067	P-L		1960	10	17.21390	23	40	31.52	+00	15	41.9		4 675
6067	P-L		1960	10	22.15559	23	38	34.25	-00	07	03.7		4 675
6067	P-L		1960	10	24.18787	23	37	54.29	-00	15	31.0		4 675
6067	P-L		1960	10	26.26113	23	37	18.66	-00	23	34.9		4 675
6643	P-L	*	1960	09	26.28543	00	11	37.63	-04	00	23.7	17.4	4 675
6643	P-L		1960	09	27.34237	00	10	32.18	-04	03	23.9		4 675
6643	P-L		1960	09	28.33822	00	09	30.73	-04	06	08.6		4 675
6643	P-L		1960	10	17.28198	23	52	14.01	-04	30	41.2		4 675
6643	P-L		1960	10	22.23406	23	49	06.83	-04	25	56.0		4 675
6643	P-L		1960	10	24.23753	23	48	05.07	-04	22	29.3		4 675
6643	P-L		1960	10	25.25350	23	47	36.90	-04	20	26.5		4 675
6643	P-L		1960	10	26.27157	23	47	10.94	-04	18	07.6		4 675
7082	P-L		1960	09	24.47431	00	16	28.97	+12	12	03.1	17.8	4 675
7082	P-L		1960	09	25.22986	00	15	58.44	+11	51	39.1		4 675
7082	P-L		1960	09	27.27569	00	14	33.24	+10	55	34.8		4 675
7082	P-L	*	1960	10	17.27085	00	02	49.77	+01	33	08.8	18.1	4 675
7082	P-L		1960	10	22.23406	00	01	17.52	-00	32	22.8		4 675
7082	P-L		1960	10	25.25350	00	00	44.41	-01	43	03.1		4 675
7082	P-L		1960	10	26.31531	00	00	36.93	-02	06	47.2		4 675
9094	P-L	*	1960	10	17.21390	23	32	20.30	-00	28	16.8	18.1	4 675
9094	P-L		1960	10	22.15559	23	32	50.42	-01	18	52.7		4 675
9094	P-L		1960	10	24.18787	23	33	16.46	-01	37	21.0		4 675
9094	P-L		1960	10	26.26113	23	33	51.17	-01	54	44.2		4 675
9505	P-L	*	1960	10	17.22501	23	27	35.67	-04	28	01.9	18.3	4 675
9505	P-L		1960	10	22.16324	23	26	15.76	-04	41	37.2		4 675
9505	P-L		1960	10	24.23753	23	25	56.36	-04	45	37.2		4 675
9505	P-L		1960	10	26.27157	23	25	45.74	-04	48	33.7		4 675
1053	T-2		1973	09	19.18611	00	07	26.20	+01	06	35.9		4 675
1053	T-2		1973	09	19.23785	00	07	23.51	+01	06	18.5		4 675
1053	T-2		1973	09	20.22847	00	06	35.66	+01	00	34.5		4 675
1053	T-2		1973	09	24.34688	00	03	12.16	+00	36	13.3		4 675
1053	T-2		1973	09	24.41597	00	03	08.58	+00	35	49.1		4 675
1053	T-2		1973	09	25.24375	00	02	27.60	+00	30	51.6		4 675
1053	T-2		1973	09	25.30729	00	02	24.38	+00	30	28.1		4 675
1053	T-2	*	1973	09	29.25330	23	59	08.11	+00	06	53.0	17.6	4 675
1053	T-2		1973	09	29.31806	23	59	04.79	+00	06	28.9		4 675
1053	T-2		1973	09	30.21007	23	58	21.06	+00	01	12.0		4 675
1053	T-2		1973	09	30.27431	23	58	17.78	+00	00	48.6		4 675
1053	T-2		1973	10	04.28958	23	55	04.23	-00	22	35.6		4 675
1053	T-2		1973	10	04.35208	23	55	01.18	-00	22	57.1		4 675
1053	T-2		1973	10	05.31684	23	54	16.19	-00	28	21.9		4 675

1053	T-2		1973	10	05.37917	23	54	13.23	-00	28	44.7		4 675
1125	T-2		1973	09	19.18611	00	12	16.78	+01	40	14.1		4 675
1125	T-2		1973	09	19.23785	00	12	14.54	+01	39	59.4		4 675
1125	T-2		1973	09	20.22847	00	11	32.71	+01	35	01.4		4 675
1125	T-2		1973	09	24.34688	00	08	35.49	+01	14	03.6		4 675
1125	T-2		1973	09	24.41597	00	08	32.39	+01	13	42.8		4 675
1125	T-2		1973	09	25.24375	00	07	56.87	+01	09	26.7		4 675
1125	T-2		1973	09	25.30729	00	07	53.95	+01	09	08.6		4 675
1125	T-2	*	1973	09	29.25330	00	05	03.78	+00	48	53.5	18.1	4 675
1125	T-2		1973	09	29.31806	00	05	00.87	+00	48	32.1		4 675
1125	T-2		1973	09	30.21007	00	04	22.89	+00	44	00.3		4 675
1125	T-2		1973	09	30.27431	00	04	20.02	+00	43	40.9		4 675
1125	T-2		1973	10	04.28958	00	01	31.82	+00	23	33.7		4 675
1125	T-2		1973	10	04.35208	00	01	29.18	+00	23	16.2		4 675
1125	T-2		1973	10	05.31684	00	00	49.91	+00	18	35.4		4 675
1125	T-2		1973	10	05.37917	00	00	47.31	+00	18	17.2		4 675
1306	T-2		1973	09	19.18611	00	23	51.53	+01	44	26.8		4 675
1306	T-2		1973	09	19.19948	00	23	51.16	+01	44	23.9		4 675
1306	T-2		1973	09	19.22500	00	23	49.87	+01	44	17.7		4 675
1306	T-2		1973	09	19.23785	00	23	49.19	+01	44	11.4		4 675
1306	T-2		1973	09	19.25006	00	23	48.92	+01	44	10.4		4 675
1306	T-2		1973	09	20.22847	00	23	07.71	+01	39	37.2		4 675
1306	T-2		1973	09	20.30278	00	23	04.45	+01	39	17.8		4 675
1306	T-2		1973	09	24.34688	00	20	10.22	+01	20	02.6		4 675
1306	T-2		1973	09	24.36181	00	20	09.63	+01	19	59.4		4 675
1306	T-2		1973	09	24.38750	00	20	08.43	+01	19	53.1		4 675
1306	T-2		1973	09	24.41597	00	20	07.13	+01	19	43.9		4 675
1306	T-2		1973	09	24.42847	00	20	06.63	+01	19	40.5		4 675
1306	T-2		1973	09	24.45434	00	20	05.33	+01	19	33.0		4 675
1306	T-2		1973	09	25.24375	00	19	31.12	+01	15	42.4		4 675
1306	T-2		1973	09	25.25642	00	19	30.66	+01	15	40.4		4 675
1306	T-2		1973	09	25.28125	00	19	29.35	+01	15	34.9		4 675
1306	T-2		1973	09	25.30729	00	19	28.43	+01	15	26.4		4 675
1306	T-2		1973	09	25.32031	00	19	27.71	+01	15	22.2		4 675
1306	T-2		1973	09	25.34601	00	19	26.44	+01	15	16.5		4 675
1306	T-2	*	1973	09	29.25330	00	16	34.16	+00	56	24.2	18.0	4 675
1306	T-2		1973	09	29.31806	00	16	31.16	+00	56	04.9		4 675
1306	T-2		1973	09	30.21007	00	15	51.83	+00	51	46.9		4 675
1306	T-2		1973	09	30.27431	00	15	48.92	+00	51	29.0		4 675
1306	T-2		1973	10	04.28958	00	12	53.01	+00	32	23.3		4 675
1306	T-2		1973	10	04.35208	00	12	50.24	+00	32	07.2		4 675
1306	T-2		1973	10	05.31684	00	12	08.58	+00	27	36.9		4 675
1306	T-2		1973	10	05.37917	00	12	05.80	+00	27	20.2		4 675
1309	T-2		1990	11	12.27100	05	23	21.12	+23	58	09.1	17.5	9 675
1309	T-2		1990	11	12.33237	05	23	19.16	+23	58	09.8		9 675
1309	T-2		1990	11	14.49010	05	22	07.20	+23	59	15.8		9 675
2216	T-2		1973	09	19.19948	00	43	09.74	+04	01	21.9		4 675
2216	T-2		1973	09	19.25006	00	43	07.53	+04	01	09.3		4 675
2216	T-2		1973	09	20.26458	00	42	23.74	+03	56	47.0		4 675
2216	T-2		1973	09	24.36181	00	39	21.50	+03	38	40.3		4 675
2216	T-2		1973	09	24.42847	00	39	18.31	+03	38	23.7		4 675
2216	T-2		1973	09	25.25642	00	38	41.14	+03	34	35.9		4 675
2216	T-2		1973	09	25.32031	00	38	38.04	+03	34	17.9		4 675
2216	T-2		1973	09	29.26632	00	35	36.36	+03	16	14.3		4 675
2216	T-2	*	1973	09	29.33073	00	35	33.26	+03	15	55.6	17.8	4 675
2216	T-2		1973	09	30.22257	00	34	52.11	+03	11	48.0		4 675
2216	T-2		1973	09	30.28785	00	34	49.01	+03	11	29.9		4 675
2216	T-2		1973	10	04.30208	00	31	43.46	+02	53	04.6		4 675
2216	T-2		1973	10	04.36476	00	31	40.54	+02	52	48.0		4 675

2216	T-2		1973	10	05.32917	00	30	56.49	+02	48	25.4		4 675
2216	T-2		1973	10	05.39132	00	30	53.52	+02	48	06.7		4 675
3151	T-2		1973	09	19.21250	00	18	13.36	-02	02	26.0		4 675
3151	T-2		1973	09	19.26354	00	18	10.22	-02	02	40.7		4 675
3151	T-2		1973	09	20.27795	00	17	10.53	-02	07	27.8		4 675
3151	T-2		1973	09	24.37431	00	13	03.83	-02	26	46.8		4 675
3151	T-2		1973	09	24.44167	00	12	59.71	-02	27	04.9		4 675
3151	T-2		1973	09	25.26875	00	12	09.76	-02	30	56.1		4 675
3151	T-2		1973	09	25.33299	00	12	05.64	-02	31	13.6		4 675
3151	T-2		1973	09	29.27986	00	08	04.53	-02	49	06.4		4 675
3151	T-2		1973	09	29.34375	00	08	00.50	-02	49	23.1		4 675
3151	T-2		1973	09	30.23524	00	07	06.50	-02	53	14.4		4 675
3151	T-2	*	1973	09	30.30174	00	07	02.24	-02	53	32.4	18.4	4 675
3151	T-2		1973	10	04.31493	00	03	02.00	-03	10	10.3		4 675
3151	T-2		1973	10	04.37674	00	02	58.23	-03	10	23.8		4 675
3151	T-2		1973	10	05.34167	00	02	01.83	-03	14	07.8		4 675
3151	T-2		1973	10	05.40347	00	01	58.19	-03	14	21.7		4 675
3159	T-2		1973	09	19.21250	00	15	31.27	-02	19	26.8		4 675
3159	T-2		1973	09	19.26354	00	15	29.16	-02	20	03.0		4 675
3159	T-2		1973	09	20.27795	00	14	47.40	-02	31	40.2		4 675
3159	T-2		1973	09	24.37431	00	11	55.04	-03	18	30.9		4 675
3159	T-2		1973	09	24.44167	00	11	52.03	-03	19	16.6		4 675
3159	T-2		1973	09	25.26875	00	11	17.36	-03	28	41.2		4 675
3159	T-2		1973	09	25.33299	00	11	14.53	-03	29	24.8		4 675
3159	T-2		1973	09	29.27986	00	08	26.57	-04	13	31.4		4 675
3159	T-2		1973	09	29.34375	00	08	23.69	-04	14	13.7		4 675
3159	T-2		1973	09	30.23524	00	07	46.25	-04	24	01.0		4 675
3159	T-2	*	1973	09	30.30174	00	07	43.28	-04	24	44.6	17.9	4 675
3159	T-2		1973	10	04.31493	00	04	57.50	-05	07	28.0		4 675
3159	T-2		1973	10	04.37674	00	04	54.80	-05	08	06.3		4 675
3159	T-2		1973	10	05.34167	00	04	16.21	-05	18	01.0		4 675
3159	T-2		1973	10	05.40347	00	04	13.68	-05	18	39.2		4 675
3276	T-2		1973	09	29.27986	00	18	14.96	-06	14	42.8		4 675
3276	T-2		1973	09	29.34375	00	18	11.68	-06	15	07.7		4 675
3276	T-2		1973	09	30.23524	00	17	27.55	-06	20	34.4		4 675
3276	T-2	*	1973	09	30.30174	00	17	24.09	-06	21	00.0	18.9	4 675
3276	T-2		1973	10	04.31493	00	14	07.53	-06	44	23.2		4 675
3276	T-2		1973	10	04.37674	00	14	04.38	-06	44	44.2		4 675
3276	T-2		1973	10	05.34167	00	13	17.89	-06	50	04.9		4 675
3276	T-2		1973	10	05.40347	00	13	14.82	-06	50	23.1		4 675
4069	T-2		1990	09	14.33976	23	52	16.24	-04	41	47.9	17.0	9 675
4069	T-2		1990	09	14.37673	23	52	14.51	-04	42	07.2		9 675
2287	T-3		1977	10	07.25868	01	15	46.88	+13	47	07.0		4 675
2287	T-3		1977	10	11.27743	01	12	08.33	+13	26	49.5		4 675
2287	T-3		1977	10	11.34375	01	12	04.63	+13	26	28.5		4 675
2287	T-3		1977	10	12.27587	01	11	14.12	+13	21	34.1		4 675
2287	T-3		1977	10	12.34271	01	11	10.29	+13	21	13.8		4 675
2287	T-3	*	1977	10	16.26233	01	07	39.16	+13	00	05.2	17.9	4 675
2287	T-3		1977	10	16.32795	01	07	35.48	+12	59	44.7		4 675
2287	T-3		1977	10	17.26458	01	06	45.90	+12	54	37.0		4 675
2287	T-3		1977	10	17.33177	01	06	42.13	+12	54	15.6		4 675
2287	T-3		1977	10	21.40868	01	03	10.83	+12	31	41.4		4 675
2287	T-3		1977	10	21.46910	01	03	07.71	+12	31	20.6		4 675
2287	T-3		1977	10	22.41528	01	02	20.32	+12	26	05.3		4 675
2287	T-3		1977	10	22.46962	01	02	17.52	+12	25	47.9		4 675
3164	T-3		1977	10	07.27031	01	26	00.92	+07	42	44.3		4 675
3164	T-3		1977	10	11.28819	01	23	07.99	+06	57	17.0		4 675
3164	T-3		1977	10	11.35642	01	23	04.90	+06	56	30.9		4 675
3164	T-3		1977	10	12.28681	01	22	24.39	+06	45	54.1		4 675

3164	T-3		1977	10	12.35347	01	22	21.35	+06	45	09.4	4 675
3164	T-3	*	1977	10	16.27309	01	19	28.94	+06	00	34.8	17.3 4 675
3164	T-3		1977	10	16.33872	01	19	25.92	+05	59	49.1	4 675
3164	T-3		1977	10	17.27552	01	18	44.89	+05	49	16.0	4 675
3164	T-3		1977	10	17.34236	01	18	41.77	+05	48	30.5	4 675
3164	T-3		1977	10	21.39792	01	15	46.47	+05	03	19.8	4 675
3164	T-3		1977	10	21.45799	01	15	43.81	+05	02	40.3	4 675
3164	T-3		1977	10	22.39844	01	15	04.38	+04	52	22.1	4 675
3164	T-3		1977	10	22.45920	01	15	01.77	+04	51	42.5	4 675
10			1990	09	15.31146	22	58	51.47	-01	04	41.4	9 675
10			1990	09	15.34701	22	58	49.88	-01	04	50.2	9 675
10			1990	09	16.32031	22	58	07.91	-01	09	06.7	9 675
10			1990	09	16.35712	22	58	06.26	-01	09	16.2	9 675
10			1990	09	20.26991	22	55	21.14	-01	26	24.5	9 675
10			1990	09	20.30463	22	55	19.70	-01	26	33.9	9 675
16			1990	11	12.27100	05	08	32.56	+18	13	18.5	9 675
16			1990	11	12.33237	05	08	30.22	+18	13	14.6	9 675
16			1990	11	14.49010	05	07	03.00	+18	09	45.6	9 675
16			1990	11	14.52048	05	07	01.65	+18	09	41.8	9 675
38			1990	09	15.31146	22	30	03.53	-01	00	49.3	9 675
38			1990	09	15.34701	22	30	01.79	-01	00	57.7	9 675
73			1990	09	17.35573	00	40	08.98	+04	08	40.7	9 675
73			1990	09	17.39166	00	40	07.23	+04	08	32.5	9 675
117			1990	09	14.33976	23	48	02.97	+01	45	15.1	9 675
117			1990	09	14.37673	23	48	00.91	+01	45	14.3	9 675
117			1990	09	15.33698	23	47	08.60	+01	44	28.6	9 675
117			1990	09	15.37274	23	47	06.56	+01	44	26.5	9 675
117			1990	09	18.30295	23	44	25.74	+01	41	47.2	9 675
117			1990	09	18.33576	23	44	23.99	+01	41	46.7	9 675
117			1990	09	20.33669	23	42	33.60	+01	39	47.5	9 675
117			1990	09	20.36742	23	42	31.83	+01	39	46.3	9 675
138			1990	11	12.27100	04	57	31.73	+23	38	18.7	9 675
138			1990	11	12.33237	04	57	28.39	+23	38	19.6	9 675
138			1990	11	14.49010	04	55	30.64	+23	38	23.9	9 675
138			1990	11	14.52048	04	55	28.90	+23	38	23.8	9 675
244			1990	11	12.27100	05	19	05.74	+19	55	52.0	9 675
244			1990	11	12.33237	05	19	03.12	+19	55	40.7	9 675
244			1990	11	14.49010	05	17	30.39	+19	48	38.8	9 675
244			1990	11	14.52048	05	17	29.20	+19	48	33.1	9 675
289			1990	09	15.38090	00	18	29.58	+02	32	01.1	9 675
289			1990	09	17.35573	00	17	16.46	+02	16	02.3	9 675
289			1990	09	17.39166	00	17	15.03	+02	15	44.6	9 675
313			1990	09	14.33976	23	51	13.75	-00	30	55.0	9 675
313			1990	09	14.37673	23	51	11.80	-00	31	17.2	9 675
313			1990	09	18.30295	23	47	55.22	-01	10	23.8	9 675
313			1990	09	18.33576	23	47	53.65	-01	10	42.3	9 675
382			1990	09	15.33698	23	27	23.27	+03	54	14.2	9 675
382			1990	09	15.37274	23	27	21.57	+03	54	06.6	9 675
382			1990	09	19.26892	23	24	22.60	+03	39	34.9	9 675
382			1990	09	19.29653	23	24	21.26	+03	39	28.7	9 675
382			1990	09	20.33669	23	23	33.99	+03	35	31.5	9 675
382			1990	09	20.36742	23	23	32.59	+03	35	24.5	9 675
388			1990	09	14.33976	23	48	58.66	-01	05	17.4	9 675
388			1990	09	14.37673	23	48	56.77	-01	05	23.7	9 675
388			1990	09	18.30295	23	45	42.76	-01	17	00.1	9 675
388			1990	09	18.33576	23	45	41.15	-01	17	06.2	9 675
460			1990	11	12.27100	05	19	33.93	+18	10	40.0	9 675
460			1990	11	12.33237	05	19	31.57	+18	10	27.7	9 675
460			1990	11	14.52048	05	18	05.82	+18	03	43.5	9 675

473	1990	09	16.33872	23	51	50.13	+09	01	18.2		16.5	9 675
473	1990	09	16.37431	23	51	47.84	+09	01	15.0			9 675
473	1990	09	18.29497	23	49	57.39	+08	58	20.4			9 675
473	1990	09	18.32760	23	49	55.49	+08	58	17.3			9 675
478	1990	09	17.34774	00	01	59.49	+16	33	50.7			9 675
478	1990	09	20.38590	23	59	48.98	+16	16	13.4			9 675
478	1990	09	20.42083	23	59	47.39	+16	16	01.0			9 675
507	1990	09	17.34774	23	47	51.92	+13	05	03.3			9 675
507	1990	09	17.38385	23	47	50.21	+13	04	56.5			9 675
507	1990	09	18.29497	23	47	07.51	+13	02	18.7			9 675
507	1990	09	18.32760	23	47	05.94	+13	02	13.0			9 675
507	1990	09	20.38590	23	45	28.74	+12	55	47.1		15.0	9 675
507	1990	09	20.42083	23	45	27.04	+12	55	40.7			9 675
529	1990	09	20.34366	00	03	26.04	-17	07	33.8			9 675
529	1990	09	20.37373	00	03	24.30	-17	07	37.4			9 675
597	1990	09	19.30417	23	51	07.06	-18	04	57.7			9 675
597	1990	09	19.33472	23	51	05.13	-18	04	58.8			9 675
707	1990	09	16.32031	23	01	20.50	+02	33	35.0			9 675
707	1990	09	16.35712	23	01	18.29	+02	33	23.3			9 675
707	1990	09	19.26892	22	58	37.77	+02	18	13.7			9 675
707	1990	09	19.29653	22	58	36.14	+02	18	04.7			9 675
732	1990	09	15.31146	22	43	39.13	-05	19	23.5			9 675
732	1990	09	15.34701	22	43	37.48	-05	19	43.1			9 675
732	1990	09	20.26991	22	40	07.80	-06	07	37.7			9 675
732	1990	09	20.30463	22	40	06.39	-06	07	56.6			9 675
734	1990	09	15.38090	00	17	27.95	+01	28	16.9			9 675
734	1990	09	17.35573	00	15	59.73	+01	22	21.4			9 675
734	1990	09	17.39166	00	15	58.06	+01	22	14.9			9 675
738	1990	09	14.33976	00	08	08.53	-03	06	16.7			9 675
738	1990	09	14.37673	00	08	06.91	-03	06	28.9			9 675
738	1990	09	18.30295	00	05	19.46	-03	27	58.6			9 675
738	1990	09	18.33576	00	05	18.00	-03	28	07.7			9 675
740	1990	09	19.30417	23	23	23.35	-17	09	19.9			9 675
740	1990	09	19.33472	23	23	22.03	-17	09	29.4			9 675
783	1990	09	19.30417	23	27	59.08	-13	44	51.1			9 675
783	1990	09	19.33472	23	27	57.60	-13	45	09.0			9 675
823	1990	09	15.31146	22	52	44.95	-00	14	20.3		15.8	9 675
823	1990	09	15.34701	22	52	42.88	-00	14	33.7			9 675
823	1990	09	20.26991	22	48	11.20	-00	46	28.2			9 675
823	1990	09	20.30463	22	48	09.26	-00	46	41.1			9 675
828	1990	09	14.33976	00	02	33.96	+00	08	29.8			9 675
828	1990	09	14.37673	00	02	32.31	+00	08	20.4			9 675
828	1990	09	18.30295	23	59	42.62	-00	08	44.7			9 675
828	1990	09	18.33576	23	59	41.24	-00	08	52.1			9 675
937	1990	09	16.32031	23	04	15.74	+02	38	13.6			9 675
937	1990	09	16.35712	23	04	13.91	+02	37	56.9			9 675
937	1990	09	19.26892	23	02	05.92	+02	16	48.3			9 675
937	1990	09	19.29653	23	02	04.62	+02	16	35.7			9 675
962	1990	09	14.33976	23	46	48.02	-03	36	57.6			9 675
962	1990	09	14.37673	23	46	46.27	-03	37	10.4			9 675
992	1990	09	17.34774	00	14	53.29	+09	49	06.8			9 675
992	1990	09	17.38385	00	14	51.77	+09	48	53.5			9 675
992	1990	09	19.40087	00	13	29.19	+09	36	16.3			9 675
992	1990	09	19.42205	00	13	28.31	+09	36	07.6			9 675
992	1990	09	20.38590	00	12	48.39	+09	29	59.9			9 675
992	1990	09	20.42083	00	12	46.82	+09	29	44.5			9 675
1015	1990	09	17.30556	23	35	07.29	-14	27	57.9			9 675
1015	1990	09	17.33941	23	35	05.87	-14	28	10.9			9 675
1015	1990	09	19.30417	23	33	43.32	-14	39	49.8			9 675

1015		1990	09	19.33472	23	33	42.01	-14	40	00.1		9 675
1118		1990	09	18.29497	23	30	25.39	+10	46	41.0		9 675
1118		1990	09	18.32760	23	30	23.77	+10	46	37.1		9 675
1119		1990	09	17.30556	00	00	33.08	-12	57	13.6		9 675
1119		1990	09	17.33941	00	00	31.14	-12	57	20.2		9 675
1119		1990	09	20.34366	23	57	43.02	-13	08	08.1		9 675
1119		1990	09	20.37373	23	57	41.22	-13	08	14.2		9 675
1178		1990	09	15.38090	00	22	00.76	+00	14	03.2		9 675
1178		1990	09	17.35573	00	20	33.59	+00	00	44.3		9 675
1178		1990	09	17.39166	00	20	32.00	+00	00	29.8		9 675
1183		1990	09	14.33976	23	59	49.43	-01	37	28.7		9 675
1183		1990	09	14.37673	23	59	47.26	-01	37	40.0		9 675
1183		1990	09	18.30295	23	56	04.78	-01	57	34.7		9 675
1183		1990	09	18.33576	23	56	02.87	-01	57	44.4		9 675
1223		1990	11	12.27100	04	58	02.21	+24	22	24.6		9 675
1223		1990	11	12.33237	04	57	59.55	+24	22	27.0		9 675
1223		1990	11	14.49010	04	56	23.53	+24	22	32.6		9 675
1223		1990	11	14.52048	04	56	22.07	+24	22	32.7		9 675
1260		1990	09	17.34774	23	52	13.71	+10	54	02.9	16.5	9 675
1260		1990	09	17.38385	23	52	11.69	+10	53	56.5		9 675
1260		1990	09	18.29497	23	51	22.11	+10	51	06.0	16.5	9 675
1260		1990	09	18.32760	23	51	20.33	+10	51	00.0		9 675
1260		1990	09	20.38590	23	49	27.42	+10	44	09.6	16.8	9 675
1260		1990	09	20.42083	23	49	25.39	+10	44	02.1		9 675
1280		1990	09	16.32031	23	06	19.31	+02	43	47.0		9 675
1280		1990	09	16.35712	23	06	17.69	+02	43	38.2		9 675
1280		1990	09	19.26892	23	04	15.53	+02	32	38.0		9 675
1280		1990	09	19.29653	23	04	14.32	+02	32	30.6		9 675
1285		1990	09	16.32031	23	10	27.30	-00	15	48.5		9 675
1285		1990	09	16.35712	23	10	25.46	-00	15	57.0		9 675
1285		1990	09	19.26892	23	08	07.48	-00	26	17.4		9 675
1285		1990	09	19.29653	23	08	06.10	-00	26	23.5		9 675
1294		1990	09	19.30417	23	40	14.21	-19	37	07.9		9 675
1294		1990	09	19.33472	23	40	12.72	-19	37	13.6		9 675
1328		1990	09	15.33698	23	52	17.71	+05	53	57.0	16.0	9 675
1328		1990	09	15.37274	23	52	16.29	+05	53	46.0		9 675
1328		1990	09	16.33872	23	51	38.71	+05	48	44.9		9 675
1328		1990	09	16.37431	23	51	37.26	+05	48	33.2		9 675
1328		1990	09	19.40087	23	49	37.95	+05	32	17.7		9 675
1328		1990	09	19.42205	23	49	36.97	+05	32	09.5		9 675
1328		1990	09	20.33669	23	49	00.82	+05	27	05.3		9 675
1328		1990	09	20.36742	23	48	59.56	+05	26	55.8		9 675
1405		1990	09	15.33698	23	28	22.39	+06	42	45.9		9 675
1405		1990	09	15.37274	23	28	19.97	+06	42	43.0		9 675
1405		1990	09	20.33669	23	23	08.72	+06	31	08.3		9 675
1405		1990	09	20.36742	23	23	06.74	+06	31	02.5		9 675
1408		1990	09	16.33872	23	57	46.83	+05	12	45.1		9 675
1408		1990	09	16.37431	23	57	45.31	+05	12	30.0		9 675
1408		1990	09	19.40087	23	55	42.08	+04	51	25.9		9 675
1408		1990	09	19.42205	23	55	41.17	+04	51	16.4		9 675
1408		1990	09	20.33669	23	55	03.81	+04	44	46.5		9 675
1408		1990	09	20.36742	23	55	02.34	+04	44	33.6		9 675
1422		1990	09	14.33976	23	56	52.29	+02	23	09.4		9 675
1422		1990	09	14.37673	23	56	50.46	+02	22	54.0		9 675
1422		1990	09	18.30295	23	53	45.87	+01	54	12.3		9 675
1422		1990	09	18.33576	23	53	44.23	+01	53	57.8		9 675
1532		1990	09	16.32031	23	05	52.60	-01	16	46.6		9 675
1532		1990	09	16.35712	23	05	50.72	-01	16	53.3		9 675
1532		1990	09	19.26892	23	03	29.71	-01	24	58.6	17.0	9 675

1532	1990	09	19.29653	23	03	28.31	-01	25	03.2		9 675
1535	1990	11	14.49010	05	10	19.61	+25	05	32.7		9 675
1535	1990	11	14.52048	05	10	18.23	+25	05	32.5		9 675
1539	1990	09	15.38090	00	28	40.49	+01	13	52.7	15.8	9 675
1539	1990	09	17.35573	00	27	23.77	+01	04	01.5	16.0	9 675
1539	1990	09	17.39166	00	27	22.31	+01	03	51.0		9 675
1542	1990	09	15.33698	23	34	18.71	+00	08	35.4		9 675
1542	1990	09	15.37274	23	34	17.13	+00	08	23.0		9 675
1650	1990	09	14.33976	00	03	48.01	+02	18	49.2		9 675
1650	1990	09	14.37673	00	03	45.96	+02	18	33.8		9 675
1650	1990	09	18.30295	00	00	18.13	+01	51	23.8		9 675
1650	1990	09	18.33576	00	00	16.31	+01	51	10.2		9 675
1691	1990	09	14.33976	00	04	34.94	+00	22	55.1		9 675
1691	1990	09	14.37673	00	04	33.33	+00	22	44.1		9 675
1691	1990	09	18.30295	00	01	47.89	+00	03	06.4	16.0	9 675
1691	1990	09	18.33576	00	01	46.36	+00	02	55.9		9 675
1716	1990	09	16.33872	00	02	51.34	+08	39	30.3	16.8	9 675
1716	1990	09	16.37431	00	02	49.61	+08	39	18.5		9 675
1716	1990	09	19.40087	00	00	26.34	+08	22	48.5	17.0	9 675
1716	1990	09	19.42205	00	00	25.30	+08	22	39.2		9 675
1726	1990	11	12.27100	05	26	46.49	+21	28	07.4		9 675
1726	1990	11	14.49010	05	25	22.51	+21	23	57.6		9 675
1726	1990	11	14.52048	05	25	21.32	+21	23	55.2		9 675
1739	1990	09	16.32031	23	01	29.26	-02	19	38.6		9 675
1739	1990	09	16.35712	23	01	27.26	-02	19	56.1		9 675
1739	1990	09	20.26991	22	58	14.63	-02	50	04.5		9 675
1739	1990	09	20.30463	22	58	12.90	-02	50	19.8		9 675
1744	1990	09	15.38090	00	22	32.60	-01	14	42.6		9 675
1744	1990	09	17.35573	00	20	38.32	-01	24	19.2		9 675
1744	1990	09	17.39166	00	20	36.27	-01	24	28.4		9 675
1818	1990	09	16.33872	00	17	58.37	+08	33	24.6	16.5	9 675
1818	1990	09	16.37431	00	17	56.47	+08	33	11.8		9 675
1818	1990	09	19.40087	00	15	21.83	+08	14	56.2	16.5	9 675
1818	1990	09	19.42205	00	15	20.67	+08	14	47.8		9 675
1935	1990	09	15.31146	22	40	01.41	+01	58	09.7		9 675
1935	1990	09	15.34701	22	39	59.96	+01	57	51.3		9 675
1935	1990	09	20.26991	22	36	44.73	+01	06	38.8		9 675
1935	1990	09	20.30463	22	36	43.34	+01	06	15.3		9 675
2001	1990	09	15.38090	00	22	56.53	+05	22	44.3		9 675
2001	1990	09	17.35573	00	19	49.52	+05	33	03.2	16.5	9 675
2001	1990	09	17.39166	00	19	46.01	+05	33	12.6		9 675
2001	1990	09	19.40087	00	16	31.70	+05	43	15.2	16.2	9 675
2001	1990	09	19.42205	00	16	29.63	+05	43	21.4		9 675
2015	1990	09	16.33872	00	18	38.47	+08	41	35.3		9 675
2015	1990	09	16.37431	00	18	36.08	+08	41	33.7		9 675
2015	1990	09	19.40087	00	15	17.76	+08	39	53.3	16.8	9 675
2015	1990	09	19.42205	00	15	16.34	+08	39	52.1		9 675
2036	1990	11	13.26250	02	39	01.66	+21	45	58.7		9 675
2036	1990	11	13.30052	02	38	58.95	+21	45	47.6		9 675
2051	1990	09	16.32031	23	19	49.47	-02	41	30.9		9 675
2051	1990	09	16.35712	23	19	47.68	-02	41	43.8		9 675
2051	1990	09	19.26892	23	17	32.07	-02	57	33.0		9 675
2051	1990	09	19.29653	23	17	30.72	-02	57	41.8		9 675
2082	1990	09	15.38090	00	32	01.58	-01	22	50.7		9 675
2082	1990	09	17.39166	00	30	33.66	-01	32	57.0	18.2	9 675
2095	1990	09	14.33976	23	47	22.04	+01	04	48.1	17.2	9 675
2095	1990	09	14.37673	23	47	20.02	+01	04	38.4		9 675
2095	1990	09	15.33698	23	46	29.98	+01	00	45.1		9 675
2095	1990	09	15.37274	23	46	28.10	+01	00	35.4		9 675

2095	1990	09	18.30295	23	43	54.50	+00	48	15.6		17.0	9 675
2095	1990	09	18.33576	23	43	52.87	+00	48	07.4			9 675
2095	1990	09	20.36742	23	42	05.59	+00	39	26.5			9 675
2115	1990	09	18.29497	23	24	55.92	+09	18	40.0			9 675
2115	1990	09	18.32760	23	24	54.49	+09	18	28.3			9 675
2161	1990	09	17.30556	23	40	20.92	-12	08	54.1		16.2	9 675
2161	1990	09	17.33941	23	40	19.45	-12	09	09.1			9 675
2161	1990	09	19.30417	23	38	51.16	-12	23	42.3			9 675
2161	1990	09	19.33472	23	38	49.73	-12	23	56.4			9 675
2161	1990	09	20.34366	23	38	04.52	-12	31	10.0			9 675
2161	1990	09	20.37373	23	38	03.08	-12	31	23.7			9 675
2170	1990	11	12.27100	04	55	55.88	+23	26	15.6			9 675
2170	1990	11	12.33237	04	55	52.80	+23	26	07.4			9 675
2170	1990	11	14.49010	04	54	04.84	+23	20	47.9			9 675
2171	1990	09	17.30556	23	50	27.87	-15	56	25.5			9 675
2171	1990	09	17.33941	23	50	25.85	-15	56	38.8			9 675
2171	1990	09	19.30417	23	48	33.93	-16	09	15.0			9 675
2171	1990	09	19.33472	23	48	32.07	-16	09	26.2			9 675
2171	1990	09	20.34366	23	47	34.84	-16	15	30.9			9 675
2171	1990	09	20.37373	23	47	32.95	-16	15	41.3			9 675
2192	1990	09	20.26991	22	51	12.80	+01	24	12.3			9 675
2192	1990	09	20.30463	22	51	11.46	+01	23	57.1			9 675
2211	1990	09	17.30556	23	38	42.20	-14	46	10.4		17.0	9 675
2211	1990	09	17.33941	23	38	40.84	-14	46	29.4			9 675
2211	1990	09	19.30417	23	37	23.63	-15	04	32.7			9 675
2211	1990	09	19.33472	23	37	22.32	-15	04	48.3			9 675
2211	1990	09	20.34366	23	36	42.78	-15	13	48.1			9 675
2211	1990	09	20.37373	23	36	41.61	-15	14	03.9			9 675
2289	1990	09	15.38090	00	14	49.09	+02	12	04.4			9 675
2289	1990	09	17.35573	00	13	13.81	+02	00	24.9			9 675
2289	1990	09	17.39166	00	13	12.02	+02	00	12.9			9 675
2305	1990	11	11.32864	04	28	23.74	+28	45	58.9			9 675
2305	1990	11	11.37222	04	28	21.21	+28	46	01.9			9 675
2305	1990	11	12.38368	04	27	26.85	+28	47	23.3			9 675
2305	1990	11	13.41719	04	26	30.13	+28	48	39.9			9 675
2371	1990	09	15.38090	00	25	55.44	+05	22	49.8			9 675
2371	1990	09	17.35573	00	24	18.85	+05	12	04.9			9 675
2371	1990	09	17.39166	00	24	17.01	+05	11	52.8			9 675
2373	1990	09	17.30556	23	50	55.46	-10	03	24.6			9 675
2373	1990	09	17.33941	23	50	54.01	-10	03	44.3			9 675
2373	1990	09	20.34366	23	48	50.38	-10	32	33.4			9 675
2394	1990	09	14.33976	23	55	25.25	-02	31	12.3			9 675
2394	1990	09	14.37673	23	55	23.61	-02	31	23.5			9 675
2394	1990	09	18.30295	23	52	33.33	-02	51	43.6		16.2	9 675
2394	1990	09	18.33576	23	52	31.87	-02	51	54.0			9 675
2421	1990	09	17.30556	00	06	36.41	-15	36	31.7			9 675
2421	1990	09	17.33941	00	06	34.85	-15	36	40.8			9 675
2421	1990	09	20.34366	00	04	19.72	-15	49	36.5			9 675
2421	1990	09	20.37373	00	04	18.29	-15	49	43.1			9 675
2432	1990	11	11.27899	02	14	46.93	+21	11	42.0		17.5	9 675
2432	1990	11	11.31111	02	14	44.79	+21	11	37.1			9 675
2432	1990	11	13.26250	02	12	41.46	+21	06	54.6			9 675
2432	1990	11	13.30052	02	12	38.94	+21	06	48.6			9 675
2537	1990	09	15.33698	23	24	37.90	+04	18	17.6		16.5	9 675
2537	1990	09	15.37274	23	24	35.60	+04	18	22.1			9 675
2537	1990	09	16.32031	23	23	35.63	+04	19	44.8			9 675
2537	1990	09	16.35712	23	23	33.24	+04	19	49.0			9 675
2537	1990	09	19.26892	23	20	30.24	+04	23	40.6			9 675
2537	1990	09	19.29653	23	20	28.51	+04	23	40.7			9 675

2555	1990	09	15.38090	00	27	12.53	+04	27	53.3		9 675
2555	1990	09	17.35573	00	25	46.81	+04	19	12.2		9 675
2555	1990	09	17.39166	00	25	45.19	+04	19	02.6		9 675
2580	1990	09	14.33976	23	49	13.72	-04	28	33.2		9 675
2580	1990	09	14.37673	23	49	11.82	-04	28	47.1		9 675
2584	1990	09	15.38090	00	28	49.02	+00	55	40.8		9 675
2584	1990	09	17.35573	00	27	01.98	+00	44	52.0		9 675
2584	1990	09	17.39166	00	26	59.93	+00	44	40.5		9 675
2628	1990	11	12.27100	05	19	47.79	+21	46	49.0		9 675
2628	1990	11	14.49010	05	18	19.03	+21	44	01.7		9 675
2628	1990	11	14.52048	05	18	17.77	+21	43	59.3		9 675
2647	1990	09	15.31146	22	57	40.14	+00	22	33.4		9 675
2647	1990	09	15.34701	22	57	37.97	+00	22	23.4		9 675
2647	1990	09	16.32031	22	56	41.72	+00	17	39.9	16.0	9 675
2647	1990	09	16.35712	22	56	39.50	+00	17	28.3		9 675
2647	1990	09	20.26991	22	52	58.78	-00	01	54.9		9 675
2647	1990	09	20.30463	22	52	56.78	-00	02	04.2		9 675
2648	1990	09	15.33698	23	22	34.01	+05	59	40.3		9 675
2648	1990	09	15.37274	23	22	31.83	+05	59	31.3		9 675
2675	1990	11	11.32864	04	37	19.25	+26	17	19.2		9 675
2675	1990	11	11.37222	04	37	16.53	+26	17	19.5		9 675
2675	1990	11	12.38368	04	36	17.82	+26	17	22.6		9 675
2675	1990	11	13.41719	04	35	16.01	+26	17	17.5	16.0	9 675
2697	1990	11	11.32864	04	35	20.07	+24	26	20.0	16.5	9 675
2697	1990	11	11.37222	04	35	18.17	+24	26	16.3		9 675
2697	1990	11	12.38368	04	34	36.72	+24	24	23.2		9 675
2697	1990	11	13.41719	04	33	53.49	+24	22	24.7		9 675
2700	1990	09	17.35573	00	40	33.11	+03	25	25.2		9 675
2700	1990	09	17.39166	00	40	31.57	+03	25	13.5		9 675
2730	1990	09	14.33976	00	13	24.74	+00	14	56.8		9 675
2730	1990	09	14.37673	00	13	22.75	+00	14	50.4		9 675
2730	1990	09	15.38090	00	12	30.10	+00	11	48.7	16.2	9 675
2730	1990	09	17.35573	00	10	45.15	+00	05	42.6	16.2	9 675
2730	1990	09	17.39166	00	10	43.18	+00	05	36.3		9 675
2730	1990	09	18.30295	00	09	54.21	+00	02	43.5		9 675
2730	1990	09	18.33576	00	09	52.43	+00	02	37.5		9 675
2736	1990	11	11.32864	04	16	46.12	+24	59	05.2		9 675
2736	1990	11	11.37222	04	16	43.29	+24	58	51.0		9 675
2736	1990	11	12.38368	04	15	41.97	+24	53	15.1		9 675
2736	1990	11	13.41719	04	14	38.07	+24	47	23.9		9 675
2762	1990	09	16.33872	00	13	09.92	+08	31	21.1		9 675
2762	1990	09	16.37431	00	13	07.83	+08	31	13.0		9 675
2762	1990	09	19.40087	00	10	17.06	+08	18	40.6		9 675
2762	1990	09	19.42205	00	10	15.81	+08	18	32.9		9 675
2791	1990	09	17.29722	23	35	28.84	+20	56	25.9	17.2	9 675
2791	1990	09	17.33108	23	35	26.11	+20	56	31.2		9 675
2791	1990	09	19.38021	23	32	34.98	+21	02	17.9		9 675
2791	1990	09	19.40764	23	32	32.54	+21	02	22.7		9 675
2798	1990	09	16.33872	23	56	52.40	+06	26	37.5		9 675
2798	1990	09	16.37431	23	56	50.55	+06	26	21.6		9 675
2798	1990	09	19.40087	23	54	18.97	+06	04	11.6		9 675
2798	1990	09	19.42205	23	54	17.85	+06	04	00.9		9 675
2798	1990	09	20.33669	23	53	31.67	+05	57	06.3		9 675
2798	1990	09	20.36742	23	53	30.04	+05	56	52.4		9 675
2803	1990	09	17.35573	00	40	52.33	+03	47	39.8	17.0	9 675
2803	1990	09	17.39166	00	40	50.81	+03	47	31.1		9 675
2872	1990	09	15.38090	00	19	06.95	+06	09	42.8		9 675
2872	1990	09	16.33872	00	18	23.73	+06	05	02.8		9 675
2872	1990	09	16.37431	00	18	22.02	+06	04	51.6		9 675

2872	1990	09	17.35573	00	17	37.16	+05	59	56.6	17.0	9 675
2872	1990	09	17.39166	00	17	35.42	+05	59	44.3		9 675
2872	1990	09	19.40087	00	16	01.80	+05	49	25.4		9 675
2872	1990	09	19.42205	00	16	00.85	+05	49	19.5		9 675
2875	1990	09	16.33872	00	04	18.25	+05	25	42.6		9 675
2875	1990	09	16.37431	00	04	16.38	+05	25	38.5		9 675
2875	1990	09	19.40087	00	01	40.47	+05	17	22.2		9 675
2875	1990	09	19.42205	00	01	39.37	+05	17	18.0		9 675
2886	1990	09	15.38090	00	36	30.91	+01	29	51.6		9 675
2886	1990	09	17.35573	00	34	59.15	+01	18	45.1		9 675
2886	1990	09	17.39166	00	34	57.37	+01	18	33.1		9 675
2929	1990	09	17.30556	23	40	40.36	-13	29	18.6		9 675
2929	1990	09	17.33941	23	40	38.99	-13	29	32.9		9 675
2929	1990	09	19.30417	23	39	18.51	-13	43	46.4		9 675
2929	1990	09	19.33472	23	39	17.24	-13	43	59.7		9 675
2929	1990	09	20.34366	23	38	36.02	-13	51	05.8		9 675
2929	1990	09	20.37373	23	38	34.73	-13	51	19.4		9 675
2942	1990	09	17.30556	23	59	30.26	-11	55	33.2		9 675
2942	1990	09	17.33941	23	59	28.26	-11	55	48.6		9 675
2942	1990	09	20.34366	23	56	37.77	-12	19	05.5		9 675
2942	1990	09	20.37373	23	56	35.96	-12	19	19.8		9 675
2947	1990	09	15.31146	22	35	51.92	-03	44	35.3		9 675
2947	1990	09	15.34701	22	35	49.87	-03	44	46.4		9 675
2947	1990	09	20.26991	22	31	30.70	-04	10	05.8		9 675
2947	1990	09	20.30463	22	31	28.82	-04	10	16.3		9 675
2955	1990	11	11.32864	04	26	21.97	+24	34	17.9		9 675
2955	1990	11	11.37222	04	26	18.95	+24	34	16.6		9 675
2955	1990	11	12.38368	04	25	14.06	+24	33	47.0		9 675
2955	1990	11	13.41719	04	24	06.32	+24	33	10.9	17.2	9 675
2998	1990	09	15.38090	00	34	56.78	+01	08	15.2		9 675
2998	1990	09	17.35573	00	33	41.54	+00	54	18.7	16.8	9 675
2998	1990	09	17.39166	00	33	40.05	+00	54	03.6		9 675
3000	1990	11	12.33237	05	25	55.27	+19	40	09.1	17.2	9 675
3000	1990	11	14.49010	05	24	30.27	+19	34	12.2		9 675
3000	1990	11	14.52048	05	24	28.99	+19	34	06.6		9 675
3043	1990	09	14.33976	23	41	59.34	+00	31	31.4		9 675
3043	1990	09	14.37673	23	41	55.07	+00	32	01.9		9 675
3043	1990	09	15.33698	23	40	06.98	+00	45	08.9		9 675
3043	1990	09	15.37274	23	40	02.77	+00	45	37.1		9 675
3043	1990	09	20.33669	23	30	39.21	+01	52	24.9		9 675
3043	1990	09	20.36742	23	30	35.61	+01	52	49.7		9 675
3047	1990	09	16.32031	23	18	48.00	-02	51	47.8		9 675
3047	1990	09	16.35712	23	18	46.06	-02	51	58.5		9 675
3047	1990	09	19.26892	23	16	18.72	-03	06	08.1		9 675
3047	1990	09	19.29653	23	16	17.29	-03	06	16.0		9 675
3097	1990	09	15.38090	00	15	36.26	+05	05	44.0		9 675
3097	1990	09	16.33872	00	14	56.36	+04	59	16.1		9 675
3097	1990	09	16.37431	00	14	54.79	+04	59	01.3		9 675
3097	1990	09	17.35573	00	14	13.62	+04	52	14.1		9 675
3097	1990	09	17.39166	00	14	12.01	+04	51	59.7		9 675
3097	1990	09	19.42205	00	12	45.36	+04	37	51.1		9 675
3127	1990	11	11.32864	04	22	38.83	+27	46	44.9		9 675
3127	1990	11	11.37222	04	22	36.07	+27	46	38.3		9 675
3127	1990	11	12.38368	04	21	36.39	+27	44	02.2		9 675
3127	1990	11	13.41719	04	20	34.40	+27	41	15.7		9 675
3143	1990	11	12.27100	05	21	52.67	+22	19	39.6	17.0	9 675
3143	1990	11	12.33237	05	21	50.41	+22	19	41.4		9 675
3143	1990	11	14.49010	05	20	29.48	+22	20	33.4		9 675
3143	1990	11	14.52048	05	20	28.24	+22	20	34.4		9 675

3171	1990	09	17.30556	23	40	24.84	-14	22	53.1		16.2	9 675
3171	1990	09	17.33941	23	40	23.11	-14	22	57.2			9 675
3171	1990	09	19.30417	23	38	43.93	-14	26	58.4			9 675
3171	1990	09	19.33472	23	38	42.33	-14	27	01.4			9 675
3171	1990	09	20.34366	23	37	51.48	-14	28	52.2			9 675
3171	1990	09	20.37373	23	37	49.94	-14	28	56.5			9 675
3186	1990	11	12.27100	05	07	54.54	+21	45	52.4			9 675
3186	1990	11	12.33237	05	07	52.13	+21	45	49.5			9 675
3186	1990	11	14.49010	05	06	25.17	+21	43	24.9			9 675
3186	1990	11	14.52048	05	06	23.70	+21	43	24.6			9 675
3219	1990	11	11.27899	02	14	14.54	+22	50	22.3		17.5	9 675
3219	1990	11	11.31111	02	14	12.98	+22	50	12.8			9 675
3219	1990	11	13.26250	02	12	42.63	+22	40	22.1			9 675
3219	1990	11	13.30052	02	12	40.71	+22	40	11.8			9 675
3263	1990	09	17.30556	23	56	13.62	-14	46	18.7			9 675
3263	1990	09	17.33941	23	56	11.69	-14	46	30.1			9 675
3263	1990	09	19.30417	23	54	21.26	-14	57	19.7			9 675
3263	1990	09	19.33472	23	54	19.47	-14	57	28.9			9 675
3263	1990	09	20.34366	23	53	22.49	-15	02	46.9			9 675
3263	1990	09	20.37373	23	53	20.64	-15	02	56.1			9 675
3298	1990	09	15.33698	23	38	39.94	+03	10	50.1		16.5	9 675
3298	1990	09	15.37274	23	38	38.04	+03	10	41.2			9 675
3298	1990	09	20.33669	23	34	24.04	+02	46	45.0			9 675
3298	1990	09	20.36742	23	34	22.38	+02	46	36.4			9 675
3311	1990	09	14.33976	23	57	44.99	-00	45	28.7			9 675
3311	1990	09	14.37673	23	57	43.18	-00	45	40.7			9 675
3311	1990	09	18.30295	23	54	38.60	-01	06	56.6		17.2	9 675
3311	1990	09	18.33576	23	54	37.05	-01	07	06.8			9 675
3326	1990	11	11.31111	02	37	50.74	+19	13	35.7		17.0	9 675
3326	1990	11	13.26250	02	35	48.44	+19	05	36.8			9 675
3326	1990	11	13.30052	02	35	45.93	+19	05	27.1			9 675
3395	1990	11	11.32864	04	13	44.76	+26	25	31.8			9 675
3395	1990	11	11.37222	04	13	42.24	+26	25	30.6			9 675
3395	1990	11	12.38368	04	12	48.11	+26	24	54.3			9 675
3395	1990	11	13.41719	04	11	51.69	+26	24	10.6			9 675
3423	1990	11	12.27100	04	54	25.42	+23	12	33.5			9 675
3423	1990	11	12.33237	04	54	22.88	+23	12	30.1			9 675
3438	1990	09	14.33976	00	08	42.79	-01	48	36.2			9 675
3438	1990	09	14.37673	00	08	40.58	-01	48	32.3			9 675
3438	1990	09	18.30295	00	04	50.04	-01	42	10.7			9 675
3438	1990	09	18.33576	00	04	48.00	-01	42	07.8			9 675
3443	1990	09	15.31146	22	47	30.22	+01	00	59.7			9 675
3443	1990	09	15.34701	22	47	29.17	+01	00	21.9			9 675
3443	1990	09	20.26991	22	45	33.46	-00	26	50.9			9 675
3443	1990	09	20.30463	22	45	32.62	-00	27	25.7			9 675
3530	1990	11	12.27100	05	03	46.05	+23	24	46.1		18.2	9 675
3530	1990	11	12.33237	05	03	42.78	+23	24	43.4			9 675
3530	1990	11	14.49010	05	01	45.08	+23	21	01.4			9 675
3530	1990	11	14.52048	05	01	43.27	+23	20	57.9			9 675
3549	1990	11	11.32864	04	26	03.83	+29	59	15.3			9 675
3549	1990	11	11.37222	04	26	01.51	+29	59	08.4			9 675
3549	1990	11	12.38368	04	25	10.63	+29	56	36.7			9 675
3549	1990	11	13.41719	04	24	17.15	+29	53	48.5		16.5	9 675
3575	1990	09	19.30417	23	27	34.27	-16	13	29.0			9 675
3575	1990	09	19.33472	23	27	32.69	-16	13	37.0			9 675
3580	1990	09	14.33976	23	49	19.50	-00	26	51.4			9 675
3580	1990	09	14.37673	23	49	17.60	-00	27	04.1			9 675
3580	1990	09	18.30295	23	46	15.26	-00	43	56.9			9 675
3580	1990	09	18.33576	23	46	13.68	-00	44	05.5			9 675

3583	1990	11	12.27100	05	11	44.27	+25	43	01.1		9 675
3583	1990	11	12.33237	05	11	42.05	+25	43	07.4		9 675
3583	1990	11	14.49010	05	10	21.68	+25	47	03.3		9 675
3583	1990	11	14.52048	05	10	20.39	+25	47	06.0		9 675
3603	1990	11	11.32864	04	10	13.53	+26	02	17.5		9 675
3603	1990	11	11.37222	04	10	10.89	+26	02	09.9		9 675
3603	1990	11	12.38368	04	09	13.15	+25	59	00.1		9 675
3645	1990	09	18.29497	23	24	30.09	+09	05	48.5	16.2	9 675
3645	1990	09	18.32760	23	24	28.49	+09	05	37.5		9 675
3751	1990	11	11.32864	04	33	49.73	+30	25	58.5		9 675
3751	1990	11	11.37222	04	33	47.46	+30	25	49.8		9 675
3751	1990	11	12.38368	04	32	59.55	+30	22	46.0		9 675
3751	1990	11	13.41719	04	32	09.88	+30	19	30.1		9 675
3763	1990	09	15.38090	00	30	14.59	-01	33	38.6		9 675
3763	1990	09	17.35573	00	28	19.06	-01	41	19.8		9 675
3763	1990	09	17.39166	00	28	16.97	-01	41	26.4		9 675
3796	1990	11	11.27899	02	04	57.12	+20	30	53.7	17.2	9 675
3796	1990	11	11.31111	02	04	55.44	+20	30	41.5		9 675
3811	1990	09	16.32031	23	16	18.38	-00	28	33.6	15.8	9 675
3811	1990	09	16.35712	23	16	16.03	-00	28	36.2		9 675
3811	1990	09	19.26892	23	13	20.21	-00	31	39.4		9 675
3811	1990	09	19.29653	23	13	18.45	-00	31	41.3		9 675
3818	1990	09	15.38090	00	22	49.22	+06	16	30.7		9 675
3818	1990	09	17.35573	00	21	09.73	+06	05	13.8		9 675
3818	1990	09	17.39166	00	21	07.76	+06	05	00.1		9 675
3818	1990	09	19.40087	00	19	23.47	+05	52	58.2	17.0	9 675
3818	1990	09	19.42205	00	19	22.40	+05	52	52.5		9 675
3835	1990	09	15.38090	00	33	57.63	+01	05	52.8	16.5	9 675
3835	1990	09	17.35573	00	32	47.98	+00	43	48.0	16.2	9 675
3835	1990	09	17.39166	00	32	46.63	+00	43	24.6		9 675
3846	1990	09	20.38590	00	18	19.24	+10	59	21.1		9 675
3846	1990	09	20.42083	00	18	17.63	+10	59	08.4		9 675
3886	1990	09	15.31146	22	51	55.04	-04	18	53.7	17.0	9 675
3886	1990	09	15.34701	22	51	53.48	-04	19	07.7		9 675
3886	1990	09	20.26991	22	48	28.74	-04	52	49.4		9 675
3886	1990	09	20.30463	22	48	27.29	-04	53	02.8		9 675
3904	1990	09	17.29722	23	43	03.17	+18	27	08.1	16.2	9 675
3904	1990	09	17.33108	23	43	00.97	+18	27	07.2		9 675
3904	1990	09	19.38021	23	40	52.33	+18	26	15.8	16.0	9 675
3904	1990	09	19.40764	23	40	50.56	+18	26	14.7		9 675
4019	1990	11	12.27100	05	15	34.23	+24	20	12.0		9 675
4019	1990	11	12.33237	05	15	31.88	+24	20	04.6		9 675
4019	1990	11	14.49010	05	14	06.11	+24	15	50.1	17.8	9 675
4019	1990	11	14.52048	05	14	04.74	+24	15	45.4		9 675
4049	1990	11	14.49010	05	29	45.80	+21	57	47.2		9 675
4049	1990	11	14.52048	05	29	44.52	+21	57	46.4		9 675
4080	1990	11	12.27100	05	06	10.36	+20	16	56.4		9 675
4080	1990	11	12.33237	05	06	06.81	+20	16	43.4		9 675
4080	1990	11	14.49010	05	04	03.77	+20	09	03.6	17.5	9 675
4080	1990	11	14.52048	05	04	01.87	+20	08	56.2		9 675
4095	1990	09	15.31146	22	42	58.33	-02	19	53.1	17.2	9 675
4095	1990	09	15.34701	22	42	56.47	-02	20	04.9		9 675
4095	1990	09	20.26991	22	39	02.73	-02	49	18.1		9 675
4095	1990	09	20.30463	22	39	00.98	-02	49	29.2		9 675
4101	1990	09	16.32031	23	13	40.80	-01	41	57.7		9 675
4101	1990	09	16.35712	23	13	38.64	-01	42	01.7		9 675
4101	1990	09	19.26892	23	10	57.38	-01	46	48.8		9 675
4101	1990	09	19.29653	23	10	55.79	-01	46	50.9		9 675
4110	1990	09	14.33976	23	44	53.29	-00	29	39.4		9 675

4110	1990	09	14.37673	23	44	51.62	-00	29	51.5		9 675
4110	1990	09	18.30295	23	41	58.46	-00	50	59.0		9 675
4110	1990	09	18.33576	23	41	57.06	-00	51	10.4		9 675
4148	1990	09	15.31146	23	00	28.44	-02	41	26.2		9 675
4148	1990	09	15.34701	23	00	26.26	-02	41	35.1		9 675
4148	1990	09	20.26991	22	55	37.55	-03	02	33.1		9 675
4148	1990	09	20.30463	22	55	35.55	-03	02	40.4		9 675
4176	1990	09	14.37673	00	02	23.15	-03	22	44.8		9 675
4176	1990	09	18.30295	23	59	34.63	-03	42	54.6		9 675
4176	1990	09	18.33576	23	59	33.14	-03	43	03.8		9 675
4178	1990	09	15.38090	00	13	48.93	+00	38	52.1	18.2	9 675
4178	1990	09	17.35573	00	12	28.07	+00	30	21.2		9 675
4178	1990	09	17.39166	00	12	26.56	+00	30	12.0		9 675
4178	1990	09	18.30295	00	11	48.90	+00	26	15.7		9 675
4178	1990	09	18.33576	00	11	47.42	+00	26	06.3		9 675
4182	1990	11	13.26250	02	35	25.82	+22	41	54.8	16.8	9 675
4182	1990	11	13.30052	02	35	23.69	+22	41	39.3		9 675
4192	1990	11	12.27100	05	13	33.86	+22	36	00.9		9 675
4192	1990	11	12.33237	05	13	31.44	+22	35	57.0		9 675
4192	1990	11	14.49010	05	12	04.71	+22	33	57.6		9 675
4192	1990	11	14.52048	05	12	03.41	+22	33	55.3		9 675
4222	1990	09	15.33698	23	38	55.06	+02	15	53.1		9 675
4222	1990	09	15.37274	23	38	53.15	+02	15	36.3		9 675
4222	1990	09	20.33669	23	34	36.48	+01	36	01.3		9 675
4222	1990	09	20.36742	23	34	34.79	+01	35	46.8		9 675
4223	1990	11	11.32864	04	34	46.98	+28	04	26.9	16.2	9 675
4223	1990	11	11.37222	04	34	44.75	+28	04	18.6		9 675
4223	1990	11	12.38368	04	33	56.33	+28	00	55.7	16.2	9 675
4223	1990	11	13.41719	04	33	05.80	+27	57	22.8	16.0	9 675
4250	1990	11	12.27100	04	54	52.71	+23	04	14.5		9 675
4250	1990	11	12.33237	04	54	49.99	+23	04	11.6		9 675
4256	1990	11	12.27100	05	24	29.12	+22	57	14.9	17.5	9 675
4256	1990	11	12.33237	05	24	26.49	+22	57	15.8		9 675
4256	1990	11	14.49010	05	22	50.23	+22	58	29.4		9 675
4256	1990	11	14.52048	05	22	48.73	+22	58	30.0		9 675
4266	1990	09	15.31146	22	28	34.83	-00	54	06.5		9 675
4266	1990	09	15.34701	22	28	33.18	-00	54	10.8		9 675
4283	1990	09	17.29722	23	34	29.79	+20	33	02.0		9 675
4283	1990	09	17.33108	23	34	27.18	+20	33	05.1		9 675
4283	1990	09	19.38021	23	31	48.92	+20	35	56.7		9 675
4283	1990	09	19.40764	23	31	46.74	+20	36	01.0		9 675
4409	1990	09	14.33976	00	06	47.80	+02	11	32.5		9 675
4409	1990	09	14.37673	00	06	46.06	+02	11	27.1		9 675
4409	1990	09	18.30295	00	03	38.65	+01	59	31.9		9 675
4409	1990	09	18.33576	00	03	37.03	+01	59	25.8		9 675
4442	1990	09	17.29722	23	26	00.15	+17	39	12.9		9 675
4442	1990	09	17.33108	23	25	58.51	+17	39	04.2		9 675
4442	1990	09	19.38021	23	24	23.21	+17	31	10.6		9 675
4470	1990	11	12.27100	04	57	55.63	+19	57	46.2		9 675
4470	1990	11	12.33237	04	57	53.01	+19	57	43.8		9 675
4470	1990	11	14.49010	04	56	19.87	+19	55	16.1		9 675
4470	1990	11	14.52048	04	56	18.46	+19	55	14.5		9 675
4488	1990	09	15.31146	22	45	04.84	-00	33	18.8	17.0	9 675
4488	1990	09	15.34701	22	45	02.95	-00	33	36.0		9 675
4488	1990	09	20.26991	22	41	00.05	-01	14	00.9		9 675
4488	1990	09	20.30463	22	40	58.31	-01	14	17.2		9 675
4550	1990	11	12.27100	05	24	42.83	+23	31	09.7		9 675
4550	1990	11	12.33237	05	24	40.41	+23	31	05.5		9 675
4550	1990	11	14.49010	05	23	14.95	+23	30	04.6		9 675

4550	1990	11	14.52048	05	23	13.68	+23	30	04.1		9 675
4603	1990	09	15.33698	23	41	07.24	+04	34	56.1		9 675
4603	1990	09	15.37274	23	41	04.88	+04	34	53.9		9 675
4603	1990	09	20.33669	23	35	50.09	+04	28	29.4		9 675
4603	1990	09	20.36742	23	35	48.10	+04	28	27.4		9 675
4619	1990	09	15.33698	23	36	00.09	+00	31	37.9		9 675
4619	1990	09	15.37274	23	35	58.46	+00	31	24.1		9 675
4621	1990	09	14.33976	23	54	18.68	+01	24	17.7		9 675
4621	1990	09	14.37673	23	54	16.65	+01	24	00.0		9 675
4621	1990	09	18.30295	23	50	56.92	+00	53	14.1		9 675
4621	1990	09	18.33576	23	50	55.13	+00	52	58.1		9 675
4628	1990	09	17.29722	23	33	40.84	+16	20	24.0	16.5	9 675
4628	1990	09	17.33108	23	33	39.03	+16	20	14.9	16.2	9 675
4628	1990	09	19.38021	23	31	52.01	+16	10	57.0		9 675
4628	1990	09	19.40764	23	31	50.52	+16	10	49.0		9 675
4635	1990	09	15.38090	00	40	40.95	+01	13	06.2		9 675
4635	1990	09	17.35573	00	39	02.51	+01	05	09.8		9 675
4635	1990	09	17.39166	00	39	00.65	+01	05	01.3		9 675
4636	1990	09	16.32031	23	01	52.65	-02	29	45.2		9 675
4636	1990	09	16.35712	23	01	51.06	-02	30	15.2		9 675
4636	1990	09	20.26991	22	59	20.70	-03	21	12.5		9 675
4636	1990	09	20.30463	22	59	19.31	-03	21	38.8		9 675
4645	1990	09	14.33976	00	11	52.94	+01	26	27.7		9 675
4645	1990	09	14.37673	00	11	51.39	+01	26	09.5		9 675
4645	1990	09	15.38090	00	11	07.95	+01	18	00.8		9 675
4645	1990	09	17.35573	00	09	41.07	+01	01	44.8		9 675
4645	1990	09	17.39166	00	09	39.39	+01	01	27.1		9 675
4645	1990	09	18.30295	00	08	58.73	+00	53	51.1		9 675
4645	1990	09	18.33576	00	08	57.20	+00	53	34.3		9 675
4647	1990	09	14.33976	00	08	30.58	+01	42	32.1	16.2	9 675
4647	1990	09	14.37673	00	08	28.97	+01	42	13.1		9 675
4647	1990	09	15.38090	00	07	47.71	+01	33	38.8	16.0	9 675
4647	1990	09	18.30295	00	05	45.31	+01	08	20.0	16.2	9 675
4647	1990	09	18.33576	00	05	43.81	+01	08	02.7		9 675
4648	1990	09	15.31146	22	40	00.84	-00	11	53.9	17.2	9 675
4648	1990	09	15.34701	22	39	58.56	-00	11	56.4		9 675
4648	1990	09	20.26991	22	35	03.45	-00	23	26.4	17.2	9 675
4648	1990	09	20.30463	22	35	01.37	-00	23	30.2		9 675
4654	1990	09	15.38090	00	37	02.75	-00	18	06.4	17.5	9 675
4654	1990	09	17.35573	00	35	02.32	-00	25	21.9	17.2	9 675
4654	1990	09	17.39166	00	35	00.10	-00	25	28.4		9 675
4658	1990	09	15.38090	00	36	22.06	+02	54	57.1		9 675
4658	1990	09	17.35573	00	35	07.55	+02	45	46.4		9 675
4658	1990	09	17.39166	00	35	06.07	+02	45	36.3		9 675
4665	1990	09	17.34774	23	55	16.39	+10	45	39.1		9 675
4665	1990	09	17.38385	23	55	14.70	+10	45	25.4		9 675
4665	1990	09	18.29497	23	54	34.45	+10	39	40.3		9 675
4665	1990	09	18.32760	23	54	32.98	+10	39	27.9		9 675
4665	1990	09	20.38590	23	53	01.22	+10	26	03.5	16.8	9 675
4665	1990	09	20.42083	23	52	59.55	+10	25	49.2		9 675
4674	1990	11	18.29167	03	38	24.91	+16	50	07.4	14.0	2 675
4674	1990	11	18.31910	03	38	22.90	+16	49	27.9		2 675
4677	1990	09	15.38090	00	30	58.67	+03	12	25.5		9 675
4677	1990	09	17.35573	00	29	39.19	+03	04	14.1		9 675
4677	1990	09	17.39166	00	29	37.68	+03	04	05.3		9 675

688 Lowell Observatory, Anderson Mesa Station
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road,
Flagstaff, AZ 86001, U.S.A.

Observer B. A. Skiff
Measurer B. A. Skiff
1.0-m reflector + CCD

1990 MF	1990	12	07.13282	03	46	37.26	+16	48	24.3	18.8R	688
1990 MF	1990	12	07.13830	03	46	36.90	+16	48	22.3		688
1990 MJ	1990	12	07.07443	22	10	26.40	+22	52	29.8	17.2R	688
1990 MJ	1990	12	07.07973	22	10	27.24	+22	52	29.2		688
1990 SB	1990	12	07.09591	00	53	13.26	-05	21	02.9	17.2R	688
1990 SB	1990	12	07.09978	00	53	13.36	-05	21	02.5		688
1990 VA	1990	12	07.14480	01	56	04.72	-09	48	35.6	18.9R r	688
1990 VA	1990	12	07.14966	01	56	04.66	-09	48	38.0	r	688
1871	1990	10	23.27869	03	23	04.21	+07	57	15.3	18.1R	688
1871	1990	10	23.28344	03	23	04.06	+07	57	14.5		688
1871	1990	10	24.30759	03	22	37.37	+07	54	34.0	18.1R	688
1871	1990	10	24.31326	03	22	37.23	+07	54	33.3		688
1876	1990	10	23.10155	19	32	17.69	-13	27	54.7	19.1R	688
1876	1990	10	23.10497	19	32	18.03	-13	27	53.2		688
1966	1990	10	23.11212	20	06	31.70	-21	03	14.8	19.4R	688
1966	1990	10	23.11550	20	06	31.86	-21	03	14.4		688
1966	1990	10	24.10056	20	07	31.28	-21	00	38.0	18.9R	688
1966	1990	10	24.10521	20	07	31.56	-21	00	37.3		688
2671	1990	10	23.26992	03	15	04.34	+18	20	07.2	16.3R	688
2671	1990	10	23.27314	03	15	04.16	+18	20	06.5		688
2703	1990	10	23.28983	03	33	14.16	+18	20	45.6	16.7R	688
2703	1990	10	23.29946	03	33	13.64	+18	20	45.5		688
2703	1990	10	24.31861	03	32	19.29	+18	20	24.8	16.7R	688
2703	1990	10	24.32210	03	32	19.10	+18	20	24.7		688
3004	1990	10	23.14708	22	12	06.10	+12	12	27.3	20.2R	688
3004	1990	10	23.15754	22	12	05.92	+12	12	25.8		688
3004	1990	10	24.14407	22	11	47.11	+12	09	23.2	20.1R	688
3004	1990	10	24.14938	22	11	47.03	+12	09	22.2		688
3041	1990	10	23.24215	00	51	23.30	-18	43	43.3	15.8R	688
3041	1990	10	23.24552	00	51	23.12	-18	43	42.9		688
3041	1990	10	24.21221	00	50	33.27	-18	41	37.6	15.8R	688
3041	1990	10	24.21557	00	50	33.10	-18	41	37.2		688
3212	1990	10	23.13155	21	54	34.38	-21	28	35.3	18.0R	688
3212	1990	10	23.13643	21	54	34.44	-21	28	34.6		688
3212	1990	10	24.12279	21	54	47.19	-21	25	43.7	17.6R	688
3212	1990	10	24.13234	21	54	47.32	-21	25	42.2		688
3536	1990	11	13.20317	03	49	15.12	+31	30	44.1		688
3536	1990	11	14.34086	03	47	56.71	+31	29	23.6		688
3536	1990	11	14.39086	03	47	53.09	+31	29	19.5		688
3579	1990	10	23.16521	00	06	54.04	-02	59	45.1	17.6R	688
3579	1990	10	23.16988	00	06	53.73	-02	59	44.1		688
3579	1990	10	24.15697	00	05	48.26	-02	56	21.4	17.3R	688
3579	1990	10	24.16166	00	05	48.00	-02	56	20.5		688
3834	1990	10	24.34441	04	37	23.67	+23	16	29.6	18.4R	688
3834	1990	10	24.34934	04	37	23.50	+23	16	30.5		688
4134	1990	10	23.12061	20	57	52.62	-19	03	28.8	18.3R	688
4134	1990	10	23.12540	20	57	52.88	-19	03	27.9		688
4134	1990	10	24.11133	20	58	40.81	-19	00	46.3	18.6R	688
4134	1990	10	24.11627	20	58	41.05	-19	00	45.3		688
4432	1990	11	15.36172	03	56	05.64	+19	37	43.0		688
4432	1990	11	15.38021	03	56	04.41	+19	37	39.6		688
4659	1990	11	14.22272	01	34	25.81	+11	41	38.0		688
4659	1990	11	14.23708	01	34	25.30	+11	41	36.9		688
4659	1990	11	15.09216	01	34	00.20	+11	40	36.6		688
4659	1990	11	15.10028	01	33	59.94	+11	40	36.1		688

691 Kitt Peak, Steward Observatory
T. Gehrels, Space Sciences Building, University of Arizona,
Tucson, AZ 85721, U.S.A.
Observers T. Gehrels, D. Rabinowitz, J. V. Scotti
0.91-m SPACEWATCH telescope
SAOC 1984

1990 VA		1990 11 22.23203	02 07 17.62	-05 49 27.0		18.7V	691
1990 VA		1990 11 22.25196	02 07 15.70	-05 49 59.2			691
1990 VA		1990 11 22.26475	02 07 14.48	-05 50 20.6			691
1990 XD1	*	1990 12 11.14851	03 34 40.42	+07 23 37.3			691
1990 XD1		1990 12 11.16965	03 34 38.72	+07 24 05.9			691
1990 XD1		1990 12 11.20159	03 34 36.24	+07 24 48.5		20.3V	691
1990 XD1		1990 12 12.25414	03 33 15.63	+07 48 17.6			691
1990 XD1		1990 12 12.26228	03 33 14.99	+07 48 29.3		20.4V	691
1990 XD1		1990 12 12.27484	03 33 14.00	+07 48 45.7			691
1990 XD1		1990 12 17.26214	03 27 22.37	+09 40 21.9			691
1990 XD1		1990 12 17.29322	03 27 20.25	+09 41 03.9		20.6V	691
1990 XD1		1990 12 17.31455	03 27 18.80	+09 41 31.4			691
1990 XD1		1990 12 25.16370	03 20 00.37	+12 35 31.4		20.5V	691
1990 XD1		1990 12 25.18458	03 19 59.30	+12 35 59.2			691
1990 XD1		1990 12 25.20637	03 19 58.26	+12 36 27.7			691
1990 YZ	*	1990 12 19.41188	07 27 52.72	+14 43 13.8			691
1990 YZ		1990 12 19.45443	07 27 50.37	+14 43 14.1		19.1V	691
1990 YZ		1990 12 24.38472	07 23 13.49	+14 45 31.3		19.5V	691
1990 YZ		1990 12 25.28449	07 22 19.86	+14 46 13.8			691
1991 AM	*	1991 01 14.49137	13 49 06.79	+13 19 43.4			691
1991 AM		1991 01 14.50006	13 49 09.08	+13 19 48.0		18.6V	691
1991 AM		1991 01 14.50899	13 49 11.44	+13 19 53.2			691
1991 AM		1991 01 14.54826	13 49 21.83	+13 20 15.7			691
1991 AM		1991 01 15.40140	13 53 12.42	+13 28 21.5		18.7V	691
1991 AM		1991 01 15.40998	13 53 14.88	+13 28 26.1			691
1991 AM		1991 01 15.41909	13 53 17.21	+13 28 31.7			691
1991 AM		1991 01 15.52361	13 53 45.54	+13 29 33.4			691
1991 AM		1991 01 15.53235	13 53 47.90	+13 29 38.8			691
1991 AM		1991 01 15.54138	13 53 50.29	+13 29 43.7			691
1991 AM		1991 01 16.39225	13 57 45.96	+13 38 03.5		18.6V	691
1991 AM		1991 01 16.39749	13 57 47.42	+13 38 06.5			691
1991 AM		1991 01 16.40828	13 57 50.44	+13 38 13.1			691

697 Kitt Peak, McGraw-Hill Observatory
R. P. Binzel, Dept. of Earth and Planetary Sciences, Massachusetts
Institute of Technology, Cambridge, MA 02138, U.S.A.
Observer R. P. Binzel
Measurer S. J. Bus
2.4-m reflector

1990 YY	*	1990 12 19.10819	03 26 46.98	+18 11 57.4		19	697
1990 YY		1990 12 19.30854	03 26 42.06	+18 11 46.1			697
1990 YY		1990 12 20.13667	03 26 22.78	+18 11 00.7			697
1990 YY		1990 12 23.33403	03 25 11.68	+18 08 20.6			697
1990 YY		1990 12 24.09375	03 24 56.04	+18 07 46.4			697

760 Goethe Link
E. Bowell, Lowell Observatory, 1400 West Mars Hill Road,
Flagstaff, AZ 86001, U.S.A.
Observers H. L. Cohen, P. R. Davis, F. K. Edmondson, T. J. Mears,
V. L. Peterson
Measurer C. M. Olmstead
0.25-m refractor
PDS scanning microdensitometer

1949	XB	1949	12	14.24508	04	29	52.18	+26	12	20.7		760
1949	XB	1949	12	14.26661	04	29	50.97	+26	12	17.8		760
1949	XC	1949	12	14.24508	04	34	21.80	+26	00	56.6		760
1949	XC	1949	12	14.26661	04	34	20.62	+26	00	51.6		760
1966	DK	1966	02	20.12095	11	04	31.99	+22	07	59.9		760
1966	DK	1966	02	20.16435	11	04	29.97	+22	08	17.2		760
70		1966	02	20.12095	10	52	23.31	+25	12	47.3		760
70		1966	02	20.16435	10	52	20.73	+25	13	02.1		760
73		1964	11	07.04185	00	52	01.15	+06	50	18.0	13.0	760
73		1964	11	07.07519	00	51	59.94	+06	50	12.2		760
95		1964	11	29.27971	05	47	34.11	+17	42	08.8	12.0	760
95		1964	11	29.32485	05	47	32.06	+17	41	55.1		760
167		1964	11	29.27971	05	47	50.96	+20	10	33.1	14.1	760
167		1964	11	29.32485	05	47	48.78	+20	10	32.1		760
347		1964	11	29.27971	05	38	27.80	+20	55	56.7	13.4	760
419		1964	11	29.27971	05	58	10.29	+20	24	04.8	14.0	760
419		1964	11	29.32485	05	58	07.96	+20	24	01.6		760
450		1956	09	09.09272	22	08	44.60	-22	36	15.9	16.2	760
450		1956	09	09.13439	22	08	42.51	-22	36	15.7		760
515		1964	11	07.04185	00	58	29.06	+02	53	50.4	15.0 A	760
515		1964	11	07.07519	00	58	28.03	+02	53	45.4	A	760
553		1964	11	29.27971	05	51	12.64	+24	26	17.9	15.3 A	760
553		1964	11	29.32485	05	51	09.94	+24	26	27.6	A	760
567		1956	09	09.09272	22	10	04.45	-25	14	58.0	16.1	760
567		1956	09	09.13439	22	10	02.68	-25	15	00.9		760
808		1965	10	25.31018	02	36	05.51	+10	33	39.2		760
808		1965	10	25.35532	02	36	03.18	+10	33	24.0	D	760
953		1964	11	07.04185	01	00	19.23	+03	40	30.3	14.6	760
953		1964	11	07.07519	01	00	18.17	+03	40	31.5		760
1063		1956	09	09.09272	21	55	28.69	-21	40	18.6	16.0	760
1063		1956	09	09.13439	21	55	26.69	-21	40	28.7		760
1248		1966	02	20.12095	11	06	41.73	+20	46	57.7		760
1248		1966	02	20.16435	11	06	39.56	+20	47	15.0		760
1323		1965	10	25.31018	02	45	14.33	+12	47	33.6		760
1323		1965	10	25.35532	02	45	12.07	+12	47	33.9		760
1348		1964	11	29.27971	05	43	43.96	+21	39	36.8	15.2	760
1348		1964	11	29.32485	05	43	41.66	+21	39	43.8		760
1670		1966	02	20.12095	11	00	13.90	+23	48	01.0		760
1680		1949	12	14.24508	04	37	53.53	+21	06	19.3		760
2163		1949	12	14.24508	04	46	12.85	+19	59	47.8		760
2163		1949	12	14.26661	04	46	11.70	+19	59	46.2		760
2170		1949	12	14.24508	04	42	38.35	+22	14	36.2	D	760
2170		1949	12	14.26661	04	42	37.22	+22	14	25.4		760
2171		1956	09	09.09272	21	53	57.40	-24	56	20.6		760
2171		1956	09	09.13439	21	53	55.72	-24	56	28.2		760
2364		1966	02	20.12095	11	06	17.09	+21	39	57.8		760
2364		1966	02	20.16435	11	06	15.02	+21	40	09.3		760
2638		1964	11	29.32485	05	42	23.72	+18	03	59.9		760
2778		1965	10	25.31018	02	54	16.82	+09	03	18.7		760
2778		1965	10	25.35532	02	54	14.10	+09	03	09.2		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

1925	BA	1990	12	20.40912	12	31	13.70	-12	00	13.2		801
1925	BA	1990	12	20.43012	12	31	14.90	-12	00	27.0		801
1928	RB	1990	12	14.06791	02	43	01.53	-04	40	56.0		801

1928	RB	1990	12	14.10784	02	43	01.02	-04	40	46.3		801
1928	RB	1990	12	20.09918	02	42	30.08	-04	11	44.7		801
1928	RB	1990	12	20.16535	02	42	29.98	-04	11	22.9		801
1931	TS1	1990	11	14.95519	21	12	43.21	-17	21	13.4		801
1931	TS1	1990	11	14.97131	21	12	44.20	-17	21	08.6		801
1931	TE4	1990	12	20.26541	06	44	38.29	+22	16	05.6		801
1931	TE4	1990	12	20.28027	06	44	37.21	+22	16	08.6		801
1937	QC	1990	12	14.08896	02	51	43.61	+24	08	58.9		801
1937	QC	1990	12	14.11870	02	51	43.04	+24	08	48.4		801
1937	QC	1990	12	15.10503	02	51	28.29	+24	03	05.1		801
1937	QC	1990	12	15.12920	02	51	27.89	+24	02	56.7		801
1937	TB	1990	11	16.25530	07	11	11.37	+26	20	53.4		801
1937	TB	1990	11	16.36301	07	11	10.93	+26	21	06.8		801
1950	HJ	1990	12	20.28751	07	44	20.30	+11	32	47.1		801
1950	HJ	1990	12	20.30601	07	44	19.56	+11	32	45.2		801
1961	BC	1990	12	13.27028	07	13	19.63	+23	05	38.2		801
1961	BC	1990	12	13.28465	07	13	18.82	+23	05	42.2		801
1961	BC	1990	12	15.29872	07	11	26.88	+23	14	55.2		801
1961	BC	1990	12	15.30628	07	11	26.42	+23	14	57.4		801
1966	CF	1990	11	15.23604	04	16	01.00	+08	36	07.3		801
1966	CF	1990	11	15.25067	04	16	00.10	+08	36	06.0		801
1969	TC2	1990	11	20.14884	01	37	11.90	+09	48	24.3		801
1969	TC2	1990	11	20.17624	01	37	10.88	+09	48	25.9		801
1972	GL	1990	12	15.04801	01	11	47.21	+06	10	15.9		801
1972	GL	1990	12	15.08817	01	11	47.47	+06	10	26.0		801
1972	HR	1990	11	20.15581	01	36	14.67	+05	52	38.9		801
1973	SO3	1990	11	20.08675	01	14	32.29	+11	53	48.3		801
1973	SO3	1990	11	20.11318	01	14	31.44	+11	53	45.1		801
1973	TP	1990	11	16.14310	01	49	34.09	+05	50	12.3		801
1973	TP	1990	11	16.17825	01	49	32.97	+05	49	52.9		801
1975	QC	1990	11	15.23025	04	13	56.96	+09	33	50.4		801
1975	QC	1990	11	15.24791	04	13	55.87	+09	33	45.5		801
1975	XH	1988	04	18.29598	14	07	28.53	+06	35	25.2	i	801
1975	XH	1990	11	21.22148	03	08	54.79	+04	11	50.9		801
1975	XH	1990	11	21.24900	03	08	52.95	+04	11	52.4		801
1975	YE	1990	12	14.42889	11	27	51.26	-05	34	45.0		801
1975	YE	1990	12	14.44222	11	27	51.98	-05	34	48.7		801
1975	YE	1990	12	20.40104	11	32	53.64	-06	04	19.5		801
1975	YE	1990	12	20.42664	11	32	54.83	-06	04	26.6		801
1976	QZ1	1990	11	19.18064	02	57	09.30	+14	17	48.2		801
1976	QZ1	1990	11	19.19380	02	57	08.41	+14	17	47.7		801
1976	QZ1	1990	12	14.06301	02	37	03.02	+14	28	59.0		801
1976	QZ1	1990	12	14.09278	02	37	02.18	+14	29	02.1		801
1976	QZ1	1990	12	15.09541	02	36	37.00	+14	30	50.9		801
1976	QZ1	1990	12	15.12331	02	36	36.29	+14	30	54.0		801
1976	WC1	1990	11	20.06859	00	45	21.30	-12	37	49.7		801
1976	WC1	1990	11	20.08999	00	45	20.93	-12	37	40.7		801
1976	WC1	1990	12	15.00850	00	46	36.77	-08	59	35.5		801
1976	WC1	1990	12	15.02865	00	46	37.20	-08	59	23.3		801
1976	YF5	1990	11	14.16361	01	57	16.59	+15	33	58.7		801
1976	YF5	1990	11	14.18595	01	57	15.42	+15	33	52.3		801
1977	DL3	1990	11	16.07880	00	30	38.96	+07	14	42.0		801
1977	DL3	1990	11	16.14907	00	30	37.89	+07	14	43.4		801
1977	TQ6	1990	11	20.03565	00	09	57.20	-09	58	17.5		801
1977	TQ6	1990	11	20.05591	00	09	57.34	-09	58	03.4		801
1978	PO3	1990	11	20.21176	03	35	35.84	+20	07	00.2		801
1978	PO3	1990	11	20.22715	03	35	34.83	+20	06	57.2		801
1978	RW	1990	12	14.12299	03	14	14.47	+16	00	10.0		801
1978	RW	1990	12	14.14307	03	14	13.80	+16	00	08.3		801

1978	RW	1990	12	20.11038	03	11	25.54	+15	52	25.0	801
1978	RW	1990	12	20.14865	03	11	24.56	+15	52	22.8	801
1978	SB3	1990	11	15.26286	05	02	27.66	+30	15	18.6	801
1978	SB3	1990	11	15.27443	05	02	27.05	+30	15	18.9	801
1978	SB3	1990	12	18.11598	04	27	06.88	+28	56	41.7	801
1978	SB3	1990	12	18.13272	04	27	05.91	+28	56	37.6	801
1978	SB3	1990	12	20.19059	04	25	14.00	+28	47	53.3	801
1978	SB3	1990	12	20.20903	04	25	12.99	+28	47	48.4	801
1978	SN4	1990	11	16.24887	04	38	27.50	+22	19	09.2	801
1978	SN4	1990	11	16.27161	04	38	26.36	+22	19	07.6	801
1978	SP6	1990	11	14.32771	07	23	03.36	+23	33	40.0	801
1978	SP6	1990	11	14.43753	07	23	04.16	+23	33	44.0	801
1978	SP6	1990	11	16.26277	07	23	17.19	+23	34	56.9	801
1978	SP6	1990	11	16.38638	07	23	17.66	+23	35	02.5	801
1978	SP6	1990	12	13.27947	07	15	18.29	+24	13	12.7	801
1978	SP6	1990	12	13.29985	07	15	17.46	+24	13	14.9	801
1978	SP6	1990	12	14.28336	07	14	38.17	+24	15	08.7	801
1978	SP6	1990	12	14.30148	07	14	37.38	+24	15	11.2	801
1979	HE5	1990	12	17.21604	06	03	42.45	+20	39	58.5	801
1979	HE5	1990	12	17.22868	06	03	41.52	+20	40	00.2	801
1979	HE5	1990	12	20.22640	06	00	05.47	+20	46	39.6	801
1979	HE5	1990	12	20.24231	06	00	04.28	+20	46	41.9	801
1979	MJ5	1990	11	20.25219	04	30	38.87	+14	25	18.6	801
1979	MJ5	1990	11	20.26955	04	30	37.77	+14	25	14.4	801
1979	QC1	1990	11	15.01748	23	52	13.75	+18	38	07.0	801
1979	QC1	1990	11	15.07287	23	52	14.17	+18	37	58.6	801
1979	SX2	1990	11	19.12067	01	28	33.72	+11	52	53.4	801
1979	SX2	1990	11	19.16218	01	28	32.76	+11	52	38.8	801
1979	SJ11	1990	11	20.09448	01	22	20.33	+13	31	21.8	801
1979	SJ11	1990	11	20.11657	01	22	19.72	+13	31	15.0	801
1979	SU11	1990	11	16.08346	00	36	25.47	+00	24	30.8	801
1979	SU11	1990	11	16.15742	00	36	24.61	+00	24	32.4	801
1979	VG	1988	03	18.33994	12	15	35.18	+02	36	42.8	W 801
1979	VG	1990	12	14.30402	08	12	17.71	+29	59	20.2	801
1979	VG	1990	12	14.32503	08	12	17.07	+29	59	26.6	801
1979	VG	1990	12	17.29630	08	10	41.81	+30	14	59.0	801
1979	VG	1990	12	17.32416	08	10	40.84	+30	15	08.7	801
1979	VS2	1990	12	20.44604	07	37	17.49	+50	59	05.0	801
1979	VS2	1990	12	20.45201	07	37	16.98	+50	59	11.1	801
1979	YO	1990	11	20.27350	05	06	58.44	+11	26	18.6	801
1979	YO	1990	11	20.29139	05	06	57.40	+11	26	17.1	801
1979	YO	1990	12	20.20050	04	36	48.15	+11	29	11.8	801
1979	YO	1990	12	20.21983	04	36	47.02	+11	29	14.1	801
1979	YO	1990	12	20.23958	04	36	45.91	+11	29	16.1	801
1980	PX	1990	12	14.13108	03	15	35.33	+13	59	58.0	801
1980	PX	1990	12	14.15512	03	15	34.49	+13	59	57.0	801
1980	PX	1990	12	20.10442	03	13	01.49	+13	58	45.0	801
1980	PX	1990	12	20.15247	03	13	00.47	+13	58	45.3	801
1980	RO2	1990	11	20.07884	00	55	05.71	+08	33	27.9	801
1980	RO2	1990	11	20.14500	00	55	05.80	+08	33	18.2	801
1980	RO2	1990	12	20.01376	01	12	02.98	+09	02	19.7	801
1980	RO2	1990	12	20.02763	01	12	03.80	+09	02	23.0	801
1980	TM	1990	12	17.24524	06	38	20.60	+29	15	26.3	801
1980	TM	1990	12	17.26545	06	38	19.41	+29	15	28.4	801
1980	TM	1990	12	20.25997	06	35	20.44	+29	20	47.6	801
1980	TM	1990	12	20.27316	06	35	19.57	+29	20	47.5	801
1980	TH3	1990	12	14.13971	03	36	40.36	+21	24	53.0	801
1980	TH3	1990	12	14.15829	03	36	39.54	+21	24	49.9	801
1980	TL13	1990	11	14.34897	07	37	08.71	-15	46	49.8	I 801

1980	TL13	1990	11	14.36068	07	37	08.86	-15	47	01.7	I	801
1980	TL13	1990	11	16.39157	07	37	24.49	-16	21	32.2		801
1980	TL13	1990	11	16.41427	07	37	24.59	-16	21	55.2		801
1980	YB	1990	11	15.17527	02	34	02.48	+06	50	03.2		801
1980	YB	1990	11	15.18862	02	34	01.66	+06	50	01.3		801
1981	CB1	1990	11	15.15942	02	16	17.02	+15	15	27.9		801
1981	CB1	1990	11	15.17227	02	16	16.19	+15	15	26.7		801
1981	EE9	1990	11	20.20362	03	09	12.98	+25	34	54.1		801
1981	EE9	1990	11	20.21905	03	09	12.21	+25	34	48.6		801
1981	EE9	1990	11	21.21682	03	08	24.52	+25	28	55.0		801
1981	EE9	1990	11	21.23258	03	08	23.73	+25	28	49.3		801
1981	EE9	1990	12	14.10396	02	55	18.73	+23	09	30.3		801
1981	EE9	1990	12	14.12737	02	55	18.29	+23	09	22.3		801
1981	ER17	1990	12	17.24241	06	28	04.18	+16	35	41.8		801
1981	ER17	1990	12	17.26245	06	28	03.12	+16	35	41.1		801
1981	ER17	1990	12	20.23610	06	25	28.64	+16	33	58.6		801
1981	ER17	1990	12	20.25061	06	25	27.85	+16	33	57.7		801
1981	EY26	1990	11	21.30976	06	12	50.30	+30	10	00.8		801
1981	EY26	1990	11	21.33339	06	12	49.58	+30	10	03.0		801
1981	EY26	1990	12	15.22044	05	54	13.88	+30	24	40.0	V	801
1981	EY26	1990	12	15.23838	05	54	12.79	+30	24	41.7		801
1981	EY26	1990	12	17.21155	05	52	24.17	+30	24	12.2		801
1981	EA28	1990	10	17.35066	05	57	35.74	+32	15	58.3		801
1981	EA28	1990	11	15.27204	05	56	49.17	+34	49	08.4		801
1981	EA28	1990	11	15.29715	05	56	48.07	+34	49	14.9		801
1981	EA28	1990	11	20.31421	05	53	10.78	+35	12	09.2		801
1981	EA28	1990	11	20.33244	05	53	09.78	+35	12	14.1		801
1981	EA28	1990	12	13.20203	05	27	17.42	+36	06	19.7		801
1981	EA28	1990	12	13.22020	05	27	15.95	+36	06	18.4		801
1981	EA28	1990	12	14.20565	05	25	59.00	+36	06	15.7	I	801
1981	EA28	1990	12	14.23591	05	25	56.55	+36	06	15.8		801
1981	JG	1990	12	20.33190	09	00	23.70	-05	00	41.8		801
1981	JG	1990	12	20.36412	09	00	23.07	-05	00	52.2		801
1981	PK	1990	11	21.39047	07	16	54.19	+23	55	43.6		801
1981	PK	1990	11	21.41932	07	16	53.49	+23	55	37.4		801
1981	PK	1990	12	13.24999	07	01	08.33	+22	41	29.2		801
1981	PK	1990	12	13.26398	07	01	07.48	+22	41	25.5		801
1981	PK	1990	12	15.27552	06	59	02.05	+22	34	35.1		801
1981	PK	1990	12	15.29556	06	59	00.75	+22	34	30.6		801
1981	RQ	1990	12	20.29328	08	13	58.29	+35	23	37.6		801
1981	RQ	1990	12	20.31140	08	13	57.34	+35	23	40.5		801
1981	RP2	1990	11	16.17280	02	38	22.54	+33	19	36.3		801
1981	RP2	1990	11	16.19957	02	38	20.91	+33	19	24.9		801
1981	SA7	1990	11	14.38731	07	52	27.58	+26	34	11.4		801
1981	SA7	1990	11	14.41928	07	52	28.46	+26	34	17.6		801
1981	SA7	1990	12	14.29660	07	51	28.63	+28	55	54.7		801
1981	SA7	1990	12	14.31699	07	51	27.88	+28	56	01.9		801
1981	SA7	1990	12	17.27608	07	49	37.47	+29	13	22.3		801
1981	SA7	1990	12	17.29391	07	49	36.71	+29	13	28.5		801
1982	HB2	1990	12	17.21930	06	14	22.54	+29	31	09.0		801
1982	HB2	1990	12	17.23609	06	14	21.17	+29	31	12.6		801
1982	HB2	1990	12	20.22948	06	10	35.75	+29	39	02.4		801
1982	HB2	1990	12	20.24569	06	10	34.47	+29	39	04.6		801
1982	OF	1990	11	15.21123	04	10	21.31	+27	25	49.5		801
1982	OF	1990	11	15.22378	04	10	20.52	+27	25	47.5		801
1982	OF	1990	11	19.23201	04	05	51.94	+27	11	14.3		801
1982	OF	1990	11	19.24656	04	05	50.91	+27	11	10.7		801
1982	SC2	1990	12	20.38472	10	18	51.00	+12	31	31.8		801
1982	SC2	1990	12	20.41922	10	18	51.83	+12	31	32.0		801

1982	TP1	1990	11	15.19990	03	33	30.12	+19	57	40.7	801
1982	TP1	1990	11	15.21351	03	33	29.23	+19	57	37.5	801
1982	TP1	1990	11	20.20780	03	28	26.89	+19	31	36.1	801
1982	TP1	1990	11	20.23663	03	28	25.09	+19	31	26.9	801
1982	TP1	1990	12	15.11127	03	07	28.44	+17	28	44.6	801
1982	TP1	1990	12	15.12661	03	07	27.88	+17	28	41.0	801
1982	TP1	1990	12	20.11407	03	05	01.58	+17	10	42.9	801
1982	TP1	1990	12	20.14578	03	05	00.71	+17	10	36.6	801
1982	UQ3	1990	12	17.25103	07	12	27.22	+24	08	21.5	801
1982	UQ3	1990	12	17.26817	07	12	26.20	+24	08	23.3	801
1982	US6	1990	11	14.17431	01	57	34.47	+10	19	07.4	801
1982	US6	1990	11	14.19759	01	57	33.24	+10	19	08.4	801
1982	UD7	1990	11	20.07332	00	53	26.33	+03	55	21.0	801
1982	UD7	1990	11	20.14079	00	53	26.37	+03	55	08.1	801
1982	UX10	1990	11	15.04632	00	23	06.95	+13	27	41.1	801
1982	UX10	1990	11	15.07584	00	23	06.76	+13	27	24.7	801
1982	UX10	1990	11	20.03983	00	22	59.76	+12	44	17.8	801
1982	UX10	1990	11	20.06209	00	22	59.78	+12	44	06.9	801
1983	AJ	1990	11	21.38532	06	28	37.06	+45	29	02.4	801
1983	AJ	1990	11	21.41498	06	28	35.64	+45	28	56.2	801
1983	AN	1990	12	14.41988	12	37	59.31	+03	19	21.4	801
1983	AN	1990	12	14.43230	12	38	00.25	+03	19	15.9	801
1983	AN	1990	12	20.41292	12	45	45.28	+02	46	53.3	801
1983	AN	1990	12	20.43285	12	45	46.71	+02	46	47.6	801
1983	AH1	1990	11	16.29554	06	13	59.22	+07	28	54.4	801
1983	AH1	1990	11	16.35749	06	13	58.26	+07	29	05.1	801
1983	AH1	1990	12	13.20725	05	56	28.33	+10	11	11.7	801
1983	AH1	1990	12	13.22535	05	56	27.19	+10	11	21.9	801
1983	AH1	1990	12	15.22672	05	54	25.77	+10	30	33.7	801
1983	AH1	1990	12	15.24084	05	54	24.85	+10	30	41.8	801
1983	CC	1990	12	14.34766	09	15	32.56	+02	46	22.8	801
1983	CC	1990	12	14.37288	09	15	32.78	+02	46	31.1	801
1983	CC	1990	12	17.34347	09	15	57.84	+03	05	07.6	801
1983	CC	1990	12	17.37191	09	15	57.92	+03	05	19.1	801
1983	CE	1990	11	16.29007	05	04	48.97	+05	25	32.7	801
1983	CE	1990	11	16.31712	05	04	47.69	+05	25	30.3	801
1983	CE	1990	12	20.19747	04	33	33.60	+05	57	42.0	801
1983	CE	1990	12	20.21745	04	33	32.50	+05	57	46.2	801
1983	CN3	1990	11	14.41036	09	02	55.33	-05	12	09.1	801
1983	CN3	1990	11	14.43053	09	02	56.81	-05	12	16.0	801
1983	CN3	1990	12	17.34769	09	31	18.50	-06	51	56.4	801
1983	CN3	1990	12	17.38087	09	31	19.20	-06	51	53.7	801
1983	CN3	1990	12	20.33525	09	32	19.29	-06	47	07.3	801
1983	CN3	1990	12	20.37427	09	32	19.87	-06	47	02.3	801
1983	RP2	1990	11	20.05176	00	46	10.06	-02	02	48.0	801
1983	RP2	1990	11	20.10718	00	46	10.41	-02	02	39.9	801
1983	TU	1990	11	16.22259	04	19	27.42	+24	53	40.0	801
1983	TU	1990	11	16.23950	04	19	26.15	+24	53	41.1	801
1983	TU	1990	11	21.28325	04	13	13.26	+24	57	43.6	801
1983	TU	1990	11	21.29434	04	13	12.41	+24	57	43.9	801
1983	TN1	1990	11	20.28001	05	12	09.35	+21	49	09.1	801
1983	TN1	1990	11	20.29720	05	12	08.36	+21	49	05.7	801
1983	TN1	1990	11	21.32598	05	11	10.65	+21	45	48.6	801
1983	TN1	1990	11	21.33891	05	11	09.89	+21	45	45.9	801
1983	TN1	1990	12	14.16568	04	46	13.76	+20	24	35.2	801
1983	TN1	1990	12	14.20287	04	46	11.22	+20	24	27.6	801
1983	TN1	1990	12	15.18963	04	45	06.95	+20	20	55.9	801
1983	VM7	1990	11	14.32426	06	05	33.64	+24	17	56.7	801
1983	VM7	1990	11	14.36500	06	05	32.60	+24	18	03.9	801

1983	VM7	1990	11	15.27771	06	05	10.84	+24	20	39.8	801
1983	VM7	1990	12	13.20426	05	40	09.48	+25	34	33.4	801
1983	VM7	1990	12	13.22282	05	40	08.09	+25	34	35.6	801
1983	VM7	1990	12	14.24072	05	38	54.49	+25	36	34.1	801
1983	WH	1990	11	15.29226	06	19	04.45	+21	50	12.6	801
1983	WH	1990	11	15.32229	06	19	03.92	+21	50	06.5	801
1983	WH	1990	12	13.21066	05	58	44.84	+20	16	24.2	801
1983	WH	1990	12	13.22797	05	58	43.67	+20	16	20.4	801
1983	WH	1990	12	15.22969	05	56	32.06	+20	09	35.7	801
1983	WH	1990	12	15.24495	05	56	31.01	+20	09	32.8	801
1983	WL	1990	11	19.17088	02	48	18.18	+09	43	33.5	801
1983	WL	1990	11	19.18682	02	48	17.12	+09	43	35.6	801
1984	BK	1990	11	15.26883	05	18	38.25	+29	09	37.6	801
1984	BK	1990	11	15.28294	05	18	37.53	+29	09	36.4	801
1984	BK	1990	11	21.32987	05	13	22.15	+29	03	49.2	801
1984	BK	1990	11	21.34594	05	13	21.20	+29	03	48.0	801
1984	BK	1990	12	15.19157	04	47	00.89	+27	55	40.9	801
1984	BK	1990	12	15.20888	04	46	59.71	+27	55	36.5	801
1984	BK	1990	12	18.12775	04	43	53.53	+27	43	14.2	801
1984	BK	1990	12	18.14553	04	43	52.38	+27	43	09.7	801
1985	CR2	1990	11	19.11255	01	04	39.09	+07	48	09.9	801
1985	CR2	1990	11	19.15308	01	04	38.04	+07	48	02.5	801
1985	PM	1990	11	15.16662	02	23	13.10	+23	17	07.9	801
1985	PM	1990	11	15.17840	02	23	12.40	+23	17	04.6	801
1985	PE2	1990	12	20.29669	08	09	40.04	+18	41	44.5	801
1985	PE2	1990	12	20.31440	08	09	39.32	+18	41	49.2	801
1985	QH5	1990	12	17.28632	08	00	27.54	+17	22	52.9	801
1985	QH5	1990	12	17.32027	08	00	26.46	+17	22	54.8	801
1985	QO6	1990	12	14.07949	02	50	00.96	+09	31	41.4	801
1985	QO6	1990	12	14.11162	02	50	00.01	+09	31	41.2	801
1985	RZ	1990	11	21.31552	05	20	45.10	+47	51	47.6	801
1985	RZ	1990	11	21.34294	05	20	43.97	+47	51	53.0	801
1985	RU3	1990	11	14.33519	06	38	23.03	+04	25	05.2	801
1985	RU3	1990	11	14.36811	06	38	22.90	+04	24	51.0	801
1985	RU3	1990	11	15.30507	06	38	19.74	+04	18	19.7	801
1985	RU3	1990	11	15.32534	06	38	19.62	+04	18	11.7	801
1985	RZ4	1990	12	15.26124	06	38	16.61	+42	27	49.6	801
1985	RZ4	1990	12	15.27929	06	38	15.33	+42	27	52.7	801
1985	RZ4	1990	12	20.25419	06	32	15.80	+42	35	39.9	801
1985	RZ4	1990	12	20.27084	06	32	14.51	+42	35	41.5	801
1985	TP	1990	11	14.18325	02	07	25.33	+10	54	09.9	801
1985	TH1	1990	11	20.30434	05	25	18.09	+20	29	51.7	801
1985	TH1	1990	11	20.32936	05	25	16.95	+20	29	50.6	801
1985	TH1	1990	12	17.17736	05	00	42.16	+19	54	39.7	801
1985	TH1	1990	12	17.18969	05	00	41.43	+19	54	39.0	801
1985	UV4	1990	12	20.34929	09	55	11.67	+03	06	39.2	801
1985	UV4	1990	12	20.39182	09	55	12.35	+03	06	31.7	801
1985	UB5	1990	11	19.11738	01	20	45.17	+06	16	07.4	801
1985	UB5	1990	11	19.15644	01	20	44.34	+06	15	54.2	801
1985	VC1	1990	12	14.34410	08	56	35.44	+37	50	58.7	801
1985	VC1	1990	12	14.36377	08	56	35.13	+37	51	08.4	801
1985	VC1	1990	12	17.33983	08	55	46.95	+38	16	08.3	801
1985	VC1	1990	12	17.36307	08	55	46.44	+38	16	20.1	801
1986	AJ	1990	11	15.97227	21	37	37.53	+08	43	10.7	801
1986	AJ	1990	11	15.98965	21	37	39.16	+08	43	12.7	801
1986	AJ	1990	11	19.97405	21	44	03.85	+08	51	55.4	801
1986	AJ	1990	11	19.98464	21	44	04.90	+08	51	56.8	801
1986	EE5	1990	11	15.28590	06	27	55.14	+21	42	19.1	801
1986	EE5	1990	11	15.37406	06	27	53.85	+21	42	18.2	801

1986	EE5	1990	12	13.21737	06	12	15.58	+21	44	34.8	801
1986	EE5	1990	12	13.23325	06	12	14.71	+21	44	34.4	801
1986	EE5	1990	12	15.25343	06	10	31.01	+21	45	07.2	801
1986	EE5	1990	12	15.26947	06	10	30.13	+21	45	07.3	801
1986	RO1	1990	11	16.24203	04	32	42.10	+24	35	35.9	801
1986	RO1	1990	12	15.14895	04	00	18.95	+22	55	49.8	801
1986	RO1	1990	12	15.16942	04	00	17.72	+22	55	44.5	801
1986	RS2	1990	11	15.20536	03	35	39.88	+12	30	26.8	801
1986	RS2	1990	11	15.21786	03	35	39.13	+12	30	23.0	801
1986	RW2	1990	11	20.27693	05	07	11.42	+24	21	37.4	801
1986	RW2	1990	11	20.29461	05	07	10.31	+24	21	37.2	801
1986	RW2	1990	12	20.19374	04	34	05.28	+23	49	15.6	801
1986	RW2	1990	12	20.21447	04	34	04.02	+23	49	13.4	801
1986	RB5	1990	12	20.23304	06	22	23.84	+18	30	33.5	801
1986	RB5	1990	12	20.24808	06	22	22.74	+18	30	35.7	801
1986	SC2	1990	11	15.03425	23	53	43.67	+08	26	58.8	801
1986	SC2	1990	11	15.06536	23	53	43.95	+08	26	46.5	801
1986	SC2	1990	11	20.00256	23	55	00.58	+07	57	14.4	801
1986	SC2	1990	11	20.02595	23	55	01.02	+07	57	06.6	801
1986	TL4	1990	11	16.25223	06	55	06.00	+24	38	34.7	801
1986	TL4	1990	11	16.32152	06	55	06.20	+24	38	46.4	801
1986	TL4	1990	12	13.23970	06	42	34.38	+26	10	14.4	801
1986	TL4	1990	12	13.25295	06	42	33.58	+26	10	17.2	801
1986	TL4	1990	12	15.26453	06	40	36.37	+26	17	27.1	801
1986	TL4	1990	12	15.29056	06	40	34.72	+26	17	32.5	801
1986	VE	1990	11	14.09613	00	30	34.83	+16	42	44.9	801
1986	VE	1990	11	14.12087	00	30	34.86	+16	42	27.8	801
1986	VE	1990	11	20.04317	00	31	27.24	+15	38	05.6	801
1986	VE	1990	11	20.05922	00	31	27.45	+15	37	56.6	801
1986	WE	1990	11	15.31124	07	27	15.99	+19	47	01.7	801
1986	WE	1990	11	15.34473	07	27	16.91	+19	47	04.5	801
1986	WE	1990	11	16.33222	07	27	44.96	+19	48	27.7	801
1986	WE	1990	11	16.37075	07	27	45.91	+19	48	30.4	801
1986	WE	1990	12	13.28191	07	27	33.11	+21	15	25.5	801
1986	WE	1990	12	13.30399	07	27	32.40	+21	15	32.1	801
1986	WE	1990	12	14.28841	07	27	02.32	+21	20	34.4	801
1986	WG	1990	11	14.41354	08	10	32.71	+02	38	51.5	801
1986	WG	1990	11	21.44028	08	16	35.40	-00	05	30.1	801
1986	WG	1990	11	21.44674	08	16	35.69	-00	05	39.4	801
1986	WG	1990	12	14.31965	08	25	39.70	-09	33	21.2	801
1986	WG	1990	12	14.33059	08	25	39.67	-09	33	37.6	801
1986	WG	1990	12	17.30425	08	25	29.32	-10	47	12.1	801
1986	WG	1990	12	17.31503	08	25	29.22	-10	47	27.8	801
1987	DJ	1990	12	14.05499	02	47	52.25	+08	31	40.5	w 801
1987	DJ	1990	12	14.08281	02	47	51.47	+08	31	46.0	w 801
1987	DJ	1990	12	20.09142	02	45	37.78	+08	53	39.0	801
1987	DJ	1990	12	20.13260	02	45	36.99	+08	53	48.7	801
1987	DS6	1990	11	20.08263	01	01	10.37	+00	07	22.0	801
1987	DS6	1990	12	15.02508	01	00	39.93	-00	01	26.1	801
1987	DS6	1990	12	15.06422	01	00	40.45	-00	01	22.3	801
1987	EP	1989	08	27.35078	02	03	01.49	+25	11	19.4	801
1987	EP	1990	12	14.33713	10	18	37.10	+19	14	56.5	801
1987	EP	1990	12	14.40924	10	18	37.68	+19	14	51.3	801
1987	EP	1990	12	17.35677	10	18	59.16	+19	11	25.3	801
1987	EP	1990	12	17.45043	10	18	59.50	+19	11	19.7	801
1987	HW	1990	11	16.40083	09	10	54.59	+27	43	24.5	801
1987	HW	1990	11	16.41932	09	10	55.46	+27	43	24.7	801
1987	HW	1990	12	20.32432	09	25	09.19	+29	04	57.4	801
1987	HW	1990	12	20.36925	09	25	08.91	+29	05	09.1	801

1987	SJ3	1990	11	16.21137	02	24	34.06	+47	24	17.4		801
1987	SJ3	1990	11	16.22927	02	24	31.68	+47	24	21.4		801
1987	UU2	1990	11	14.94854	21	04	52.25	-15	41	21.3		801
1987	UU2	1990	11	14.96167	21	04	53.53	-15	41	16.0		801
1987	UU2	1990	11	15.96003	21	06	35.35	-15	34	39.2	U	801
1988	AF	1990	09	19.05191	21	10	39.53	-04	39	47.9		801
1988	AF	1990	09	19.10005	21	10	38.00	-04	39	53.6		801
1988	BB4	1990	11	21.21263	03	06	51.88	+23	55	56.1		801
1988	BB4	1990	11	21.22926	03	06	50.80	+23	55	49.2		801
1988	BB4	1990	12	14.07556	02	48	19.05	+21	18	19.7		801
1988	BB4	1990	12	14.09633	02	48	18.39	+21	18	12.1		801
1988	BB4	1990	12	20.09557	02	45	51.95	+20	43	29.2		801
1988	BB4	1990	12	20.12958	02	45	51.28	+20	43	18.3		801
1988	CK	1990	11	14.19495	02	23	52.94	+31	05	40.7		801
1988	CK	1990	11	14.21318	02	23	51.71	+31	05	35.2		801
1988	CK	1990	11	16.15451	02	21	46.81	+30	55	43.3		801
1988	CK	1990	11	16.16627	02	21	46.02	+30	55	39.5		801
1988	CH2	1990	12	20.05780	02	00	57.17	+01	02	47.9		801
1988	CH2	1990	12	20.08319	02	00	57.60	+01	02	58.9		801
1988	CS2	1990	11	15.20280	03	29	26.60	+26	45	43.3		801
1988	CS2	1990	11	15.21574	03	29	25.70	+26	45	39.6		801
1988	CT5	1990	11	20.01051	01	18	20.66	+31	00	15.3		801
1988	CT5	1990	11	20.02892	01	18	20.04	+31	00	07.0		801
1988	CT5	1990	12	20.02109	01	17	31.29	+27	40	38.6		801
1988	CT5	1990	12	20.05103	01	17	32.02	+27	40	30.2		801
1988	CU7	1990	11	19.26022	04	34	18.04	+31	55	44.3		801
1988	CU7	1990	11	19.27841	04	34	16.77	+31	55	44.4		801
1988	CU7	1990	12	18.10152	04	00	58.15	+30	56	25.2		801
1988	CU7	1990	12	18.11991	04	00	57.04	+30	56	20.9		801
1988	DR	1990	11	16.16137	02	33	17.94	+02	47	56.1		801
1988	DR	1990	11	16.18049	02	33	16.83	+02	47	47.7		801
1988	JV	1990	11	14.39814	08	35	07.35	+22	16	31.8		801
1988	JV	1990	11	14.41635	08	35	08.17	+22	16	36.6		801
1988	PP	1990	12	14.38514	11	00	38.36	+09	00	05.9		801
1988	PP	1990	12	14.40015	11	00	39.16	+09	00	06.9		801
1988	PP	1990	12	17.41620	11	03	05.40	+09	00	08.3		801
1988	PP	1990	12	17.44488	11	03	06.79	+09	00	08.8		801
1988	PY	1990	11	16.21516	04	22	43.65	+29	41	42.0		801
1988	PY	1990	11	16.24494	04	22	42.56	+29	41	39.7		801
1988	QE	1990	11	15.16311	02	17	17.15	+17	20	36.4		801
1988	QE	1990	11	15.18133	02	17	16.61	+17	20	32.4		801
1988	RT	1990	10	20.33926	04	13	00.33	+26	46	38.6		801
1988	RT	1990	10	20.39071	04	12	59.38	+26	46	35.9		801
1988	RT	1990	11	15.20806	04	00	46.18	+26	12	51.9		801
1988	RT	1990	11	15.23291	04	00	45.32	+26	12	49.0		801
1988	RT	1990	11	20.19626	03	57	54.41	+26	02	38.4		801
1988	RT	1990	11	20.22420	03	57	53.42	+26	02	34.8		801
1988	RF5	1990	11	16.40999	10	00	32.73	+20	47	55.5		801
1988	RF5	1990	11	16.42898	10	00	34.04	+20	47	48.9		801
1988	RF5	1990	12	14.37926	10	26	15.58	+18	41	58.3		801
1988	RF5	1990	12	14.39446	10	26	16.13	+18	41	55.6		801
1988	RF5	1990	12	17.36632	10	28	00.43	+18	32	40.7		801
1988	RF5	1990	12	17.38682	10	28	01.07	+18	32	37.8		801
1988	TU2	1990	11	15.25909	05	00	26.46	+23	15	52.4		801
1988	TU2	1990	11	15.28039	05	00	25.78	+23	15	48.1		801
1988	TU2	1990	11	21.29957	04	57	10.39	+22	54	59.4		801
1988	TU2	1990	11	21.32235	04	57	09.60	+22	54	54.6		801
1989	KB	1990	11	16.32582	06	36	05.54	+24	47	16.0		801
1989	KB	1990	11	16.35330	06	36	04.53	+24	47	29.5		801

1989	KB	1990	12	13.23638	06	09	32.67	+28	54	28.3	801
1989	KB	1990	12	13.24679	06	09	31.75	+28	54	34.7	801
1989	KB	1990	12	15.25656	06	06	51.80	+29	11	56.8	801
1989	KB	1990	12	15.26714	06	06	50.90	+29	12	01.6	801
1989	KD	1990	11	15.30840	07	24	08.29	+15	39	58.3	801
1989	KD	1990	11	15.42197	07	24	08.17	+15	40	09.7	801
1989	KD	1990	11	16.26606	07	24	08.05	+15	41	38.0	801
1989	KD	1990	11	16.38174	07	24	07.67	+15	41	52.1	801
1989	ME	1990	12	14.99390	00	10	28.33	+39	06	29.4	801
1989	ME	1990	12	15.02039	00	10	29.14	+39	06	20.4	801
1989	NJ	1990	11	16.21942	04	18	01.08	+15	42	25.1	801
1989	NJ	1990	11	16.23668	04	18	00.03	+15	42	18.9	801
1989	NJ	1990	11	19.25123	04	14	59.15	+15	24	45.4	801
1989	NJ	1990	11	19.27008	04	14	57.96	+15	24	38.7	801
1989	NM	1990	12	15.20044	05	27	05.22	+19	32	04.1	801
1989	NM	1990	12	15.21668	05	27	04.15	+19	32	05.8	801
1989	QL	1990	11	16.40478	09	53	33.50	+19	35	09.9	801
1989	QL	1990	11	16.42282	09	53	35.15	+19	35	13.9	801
1989	QL	1990	11	21.43554	10	01	12.44	+19	56	53.9	801
1989	QL	1990	11	21.44352	10	01	13.12	+19	56	56.2	801
1989	QL	1990	12	14.37045	10	31	22.26	+22	51	58.9	801
1989	QL	1990	12	14.38215	10	31	23.01	+22	52	06.5	801
1989	QL	1990	12	17.41983	10	34	38.66	+23	26	44.7	801
1989	QL	1990	12	17.43780	10	34	39.76	+23	26	58.1	801
1989	SH	1990	11	21.39637	08	54	24.69	+26	09	06.7	801
1989	SH	1990	11	21.43122	08	54	25.27	+26	09	06.4	801
1989	SH	1990	12	14.34037	08	54	33.32	+26	27	04.1	801
1989	SH	1990	12	14.37590	08	54	32.63	+26	27	07.5	801
1989	SH	1990	12	17.33683	08	53	32.56	+26	32	06.0	801
1989	SH	1990	12	17.36940	08	53	31.78	+26	32	09.5	801
1989	SS	1990	11	14.34274	07	37	55.03	+10	59	09.7	801
1989	SS	1990	11	14.37255	07	37	55.32	+10	58	59.8	801
1989	SS	1990	11	16.33674	07	38	11.60	+10	46	50.5	801
1989	SS	1990	11	16.37412	07	38	11.81	+10	46	36.6	801
1989	SS	1990	12	13.29046	07	31	56.68	+08	24	49.5	801
1989	SS	1990	12	13.31515	07	31	55.82	+08	24	43.1	801
1989	SS	1990	12	14.29351	07	31	22.19	+08	20	47.6	801
1989	SS	1990	12	14.31455	07	31	21.42	+08	20	42.8	801
1989	SZ	1990	11	16.20561	02	19	29.61	+48	15	04.0	801
1989	SZ	1990	11	16.23241	02	19	28.40	+48	14	59.4	801
1989	SZ	1990	12	20.12177	02	02	11.62	+45	48	20.2	801
1989	SZ	1990	12	20.17594	02	02	10.81	+45	48	04.1	801
1989	TP1	1990	12	14.33381	08	50	34.47	+16	35	11.2	801
1989	TP1	1990	12	14.39178	08	50	33.62	+16	35	13.4	801
1989	TP1	1990	12	20.31726	08	48	48.78	+16	41	03.4	801
1989	TP1	1990	12	20.36161	08	48	47.77	+16	41	06.5	801
1989	TS1	1990	11	14.16023	01	58	50.78	+28	00	41.6	801
1989	TS1	1990	11	14.18860	01	58	49.78	+28	00	38.1	801
1989	TG17	1990	11	14.35668	07	38	47.23	+08	48	33.3	801
1989	TG17	1990	11	14.42653	07	38	47.47	+08	48	18.5	801
1989	TG17	1990	11	15.35823	07	38	51.15	+08	44	55.5	801
1989	TG17	1990	12	13.28779	07	31	15.96	+07	39	43.5	801
1989	TG17	1990	12	13.31241	07	31	15.06	+07	39	42.9	801
1989	TG17	1990	12	14.29086	07	30	40.59	+07	38	59.6	801
1989	TG17	1990	12	14.31251	07	30	39.80	+07	38	58.7	801
1989	UY	1990	12	17.35089	09	44	53.67	-04	23	47.0	801
1989	UY	1990	12	17.37786	09	44	53.71	-04	23	59.2	801
1989	UY	1990	12	20.34586	09	44	56.84	-04	46	01.4	801
1989	UY	1990	12	20.37197	09	44	56.79	-04	46	13.2	801

1989	UR4	1990	12	14.42425	12	14	28.41	+00	54	40.7	801
1989	UR4	1990	12	14.43554	12	14	29.17	+00	54	36.3	801
1989	UR4	1990	12	20.40576	12	21	47.43	+00	11	56.4	801
1989	UR4	1990	12	20.42286	12	21	48.66	+00	11	49.1	801
1989	UL5	1990	11	14.40189	08	39	58.05	+30	53	45.7	801
1989	UL5	1990	11	14.43411	08	39	59.31	+30	53	49.9	801
1989	UL5	1990	12	17.29866	08	47	44.10	+32	52	12.0	801
1989	UL5	1990	12	17.33156	08	47	43.56	+32	52	21.5	801
1989	UL5	1990	12	20.32053	08	46	50.80	+33	06	59.6	801
1989	UL5	1990	12	20.35904	08	46	49.96	+33	07	09.6	801
1989	UK8	1990	11	21.40345	09	18	08.42	+22	11	36.3	801
1989	UK8	1990	11	21.42322	09	18	09.05	+22	11	38.1	801
1989	UK8	1990	12	20.32828	09	24	57.83	+23	44	49.3	801
1989	UK8	1990	12	20.36679	09	24	57.53	+23	45	00.8	801
1989	WB	1990	12	14.41326	11	26	26.29	+17	42	50.3	801
1989	WB	1990	12	14.43885	11	26	27.31	+17	42	51.2	801
1989	WB	1990	12	17.40627	11	28	24.85	+17	44	26.5	801
1989	WB	1990	12	17.43397	11	28	25.89	+17	44	28.1	801
1989	WV	1990	12	14.38902	11	04	50.12	+22	30	04.6	801
1989	WV	1990	12	14.40659	11	04	50.87	+22	30	08.5	801
1989	WV	1990	12	17.40037	11	06	55.39	+22	41	53.9	801
1989	WV	1990	12	17.42344	11	06	56.28	+22	41	59.7	801
1989	WX	1990	11	21.40850	09	41	00.86	+23	25	06.0	801
1989	WX	1990	11	21.42789	09	41	01.51	+23	25	07.7	801
1989	WX	1990	12	17.35394	09	48	37.99	+24	41	55.5	801
1989	WX	1990	12	17.38944	09	48	37.97	+24	42	05.0	801
1989	WX	1990	12	20.34264	09	48	34.27	+24	55	49.1	801
1989	WX	1990	12	20.38766	09	48	34.08	+24	56	02.4	801
1989	WE1	1990	12	17.39720	10	55	15.66	+16	57	22.2	801
1989	WE1	1990	12	17.43027	10	55	16.46	+16	57	26.2	801
1989	WE1	1990	12	20.37978	10	56	26.08	+17	04	19.1	801
1989	WE1	1990	12	20.41622	10	56	26.83	+17	04	24.8	801
1990	MF	1990	11	15.24000	04	24	18.79	+18	53	57.5	801
1990	MF	1990	11	15.24425	04	24	18.20	+18	53	55.5	801
1990	MF	1990	11	20.24251	04	13	46.68	+18	18	28.2	801
1990	MF	1990	11	20.24786	04	13	46.01	+18	18	26.3	801
1990	MJ	1990	11	14.96818	21	11	47.38	+24	13	44.2	801
1990	MJ	1990	11	14.97676	21	11	48.67	+24	13	41.7	801
1990	MJ	1990	11	15.95563	21	14	17.90	+24	09	05.2	801
1990	MJ	1990	11	15.96589	21	14	19.46	+24	09	02.4	801
1990	MJ	1990	12	14.94185	22	32	01.11	+22	35	30.2	801
1990	MJ	1990	12	14.94486	22	32	01.59	+22	35	30.0	801
1990	OB	1990	11	14.94443	20	56	23.03	-05	39	38.5	801
1990	OB	1990	11	14.95815	20	56	24.20	-05	39	40.4	801
1990	OB	1990	11	16.94358	20	59	19.73	-05	44	22.9	801
1990	OB	1990	11	16.95253	20	59	20.44	-05	44	25.3	801
1990	OE	1990	11	14.95208	21	09	42.85	-03	24	39.8	801
1990	OE	1990	11	14.96550	21	09	44.05	-03	24	39.6	801
1990	OE	1990	11	15.95208	21	11	13.46	-03	24	31.7	801
1990	OE	1990	11	15.96332	21	11	14.44	-03	24	31.3	801
1990	OT	1990	11	19.97837	21	50	52.35	-04	44	20.5	801
1990	OT	1990	11	19.98802	21	50	53.24	-04	44	17.6	W 801
1990	OA1	1990	11	15.97926	21	32	07.51	+02	51	12.7	801
1990	OA1	1990	11	15.99308	21	32	08.38	+02	51	12.4	801
1990	OA1	1990	11	20.98500	21	37	31.54	+02	51	49.8	801
1990	OA1	1990	11	20.99692	21	37	32.32	+02	51	50.0	801
1990	OK1	1990	12	13.95409	22	52	34.98	+29	47	12.9	801
1990	OK1	1990	12	13.96088	22	52	35.98	+29	47	14.3	801
1990	PA	1990	10	15.28554	03	11	43.37	+00	02	43.2	801

1990	PA	1990	10	15.34025	03	11	41.06	+00 02 37.8	801
1990	PA	1990	10	16.30144	03	11	01.78	+00 01 04.2	801
1990	PA	1990	10	16.33919	03	11	00.12	+00 01 00.6	801
1990	QB	1990	11	15.98274	21	46	26.36	+03 49 04.3	801
1990	QB	1990	11	15.99663	21	46	27.35	+03 49 13.7	801
1990	QB	1990	11	19.96696	21	51	20.81	+04 34 42.5	801
1990	QB	1990	11	19.98138	21	51	21.90	+04 34 52.5	801
1990	QG	1990	11	14.98814	22	33	13.34	-03 18 54.1	801
1990	QG	1990	11	15.00983	22	33	14.79	-03 18 44.2	801
1990	QG	1990	11	16.03764	22	34	25.94	-03 10 47.7	801
1990	QG	1990	11	16.06091	22	34	27.46	-03 10 37.1	801
1990	QG	1990	12	13.98781	23	14	51.77	+01 09 44.0	801
1990	QG	1990	12	13.99647	23	14	52.52	+01 09 49.2	801
1990	QG	1990	12	14.98071	23	16	32.04	+01 20 21.7	801
1990	QG	1990	12	14.98955	23	16	32.89	+01 20 27.3	801
1990	QM2	1990	12	13.97587	00	07	12.39	-21 58 37.2	801
1990	QM2	1990	12	13.98146	00	07	12.91	-21 58 33.4	801
1990	QO3	1990	11	14.99284	22	41	27.75	-07 26 08.1	801
1990	QO3	1990	11	15.02977	22	41	28.43	-07 25 58.3	801
1990	QO3	1990	11	16.02861	22	41	48.19	-07 21 28.4	801
1990	QO3	1990	11	16.06484	22	41	48.97	-07 21 18.2	801
1990	QP3	1990	11	14.99785	22	55	02.47	-10 18 20.3	801
1990	QP3	1990	11	15.02569	22	55	03.31	-10 18 13.4	801
1990	SB	1990	11	14.10260	00	48	39.26	-04 58 39.4	801
1990	SB	1990	11	14.13852	00	48	38.91	-04 58 49.6	801
1990	SB	1990	12	14.02997	00	56	58.46	-05 02 36.7	801
1990	SB	1990	12	14.04878	00	56	59.10	-05 02 33.1	801
1990	SQ	1990	11	14.04455	21	28	55.37	+20 20 47.7	801
1990	SQ	1990	11	14.04652	21	28	55.48	+20 20 53.2	801
1990	SQ	1990	11	15.96881	21	31	11.04	+21 50 14.3	801
1990	SQ	1990	11	15.97620	21	31	11.52	+21 50 34.7	801
1990	SQ	1990	12	20.98042	22	55	48.51	+46 08 18.2	801
1990	SQ	1990	12	20.98525	22	55	49.59	+46 08 28.3	801
1990	SG4	1990	11	14.06904	23	25	57.47	+05 33 05.7	801
1990	SG4	1990	11	14.08356	23	25	58.03	+05 33 04.0	801
1990	SG4	1990	11	16.04251	23	27	18.75	+05 31 40.5	801
1990	SG4	1990	11	16.06839	23	27	19.79	+05 31 39.8	801
1990	SG4	1990	12	13.99258	23	54	15.01	+06 23 02.6	801
1990	SG4	1990	12	14.00054	23	54	15.47	+06 23 03.6	801
1990	TR	1990	11	16.12618	01	55	51.80	+26 57 13.9	801
1990	TR	1990	11	16.17527	01	55	50.96	+26 57 23.0	801
1990	TR	1990	11	20.13581	01	55	31.73	+27 08 00.0	801
1990	TR	1990	11	20.22176	01	55	31.28	+27 08 09.9	801
1990	TR	1990	12	14.04475	02	07	29.35	+27 33 56.8	801
1990	TR	1990	12	14.05789	02	07	30.02	+27 33 57.5	801
1990	TR	1990	12	15.06859	02	08	27.15	+27 34 47.1	801
1990	TR	1990	12	15.08392	02	08	27.96	+27 34 47.7	801
1990	TZ	1990	12	14.99729	00	30	06.28	+15 06 46.0	801
1990	TZ	1990	12	15.01442	00	30	07.19	+15 06 35.3	801
1990	TZ	1990	12	19.97612	00	34	58.66	+14 18 23.1	801
1990	TZ	1990	12	19.99015	00	34	59.46	+14 18 15.8	801
1990	TO1	1990	12	15.00036	00	29	10.46	+08 07 14.9	801
1990	TO1	1990	12	15.01201	00	29	11.41	+08 07 09.9	801
1990	TN3	1990	12	15.04421	01	13	52.92	+31 03 01.0	801
1990	TN3	1990	12	15.09174	01	13	53.15	+31 03 09.6	801
1990	TN3	1990	12	20.01760	01	15	07.75	+31 19 23.7	801
1990	TN3	1990	12	20.05404	01	15	08.45	+31 19 30.9	801
1990	UQ	1990	11	15.18522	02	43	35.23	+04 47 56.9	801
1990	UQ	1990	11	15.19192	02	43	34.57	+04 47 57.7	801

1990	UQ	1990	11	20.17051	02	36	10.32	+04	55	52.4	801
1990	UQ	1990	11	20.18619	02	36	09.04	+04	55	55.2	801
1990	UX2	1990	11	19.08845	00	09	59.28	+00	07	16.1	801
1990	UX2	1990	11	19.19899	00	09	58.58	+00	07	13.1	801
1990	VB	1990	11	19.07295	23	05	34.77	+20	36	09.3	801
1990	VB	1990	11	19.07660	23	05	35.78	+20	36	06.5	801
1990	VB	1990	12	14.01756	00	51	55.16	+16	08	24.2	801
1990	VB	1990	12	14.02105	00	51	55.94	+16	08	22.8	801
1990	VU1	1990	12	18.09332	03	40	26.21	+15	10	20.3	801
1990	VU1	1990	12	18.12358	03	40	25.29	+15	10	23.0	801
1990	VX2	1990	11	21.36619	04	05	24.62	+29	33	09.4	801
1990	VX2	1990	11	21.37073	04	05	24.07	+29	33	15.8	801
1990	WA	1990	12	14.27793	05	57	22.95	+46	03	30.3	801
1990	WA	1990	12	14.28002	05	57	22.82	+46	03	39.4	801
1990	WA	1990	12	18.16245	05	53	18.94	+50	23	54.6	801
1990	WA	1990	12	18.16491	05	53	18.77	+50	24	03.4	t 801
1990	WW2	1990	12	13.18390	05	42	19.59	+19	40	25.0	801
1990	WW2	1990	12	13.19233	05	42	18.98	+19	40	30.0	801
1990	WW2	1990	12	14.24352	05	41	04.72	+19	51	05.1	801
1990	WW2	1990	12	14.26767	05	41	02.94	+19	51	19.1	801
1990	XJ	1990	12	17.93719	02	06	37.98	+23	42	46.8	801
1990	XJ	1990	12	17.93877	02	06	38.13	+23	42	39.7	801
1990	XJ	1990	12	20.03174	02	10	18.51	+21	48	43.9	801
1990	XJ	1990	12	20.03458	02	10	18.79	+21	48	34.7	801
3040	P-L	1990	11	15.02145	23	52	24.35	+12	58	38.1	801
3040	P-L	1990	11	15.05770	23	52	24.97	+12	58	30.4	801
3523	P-L	1990	11	15.36825	08	01	30.23	+30	02	41.9	801
3523	P-L	1990	11	15.43279	08	01	31.30	+30	02	45.5	801
3523	P-L	1990	12	14.29933	07	56	30.33	+30	46	52.5	801
3523	P-L	1990	12	14.32258	07	56	29.38	+30	46	55.0	801
3523	P-L	1990	12	17.28075	07	54	24.82	+30	52	21.9	801
3523	P-L	1990	12	17.31775	07	54	23.08	+30	52	25.9	801
3523	P-L	1990	12	20.29079	07	52	01.95	+30	57	37.7	801
3523	P-L	1990	12	20.30894	07	52	01.00	+30	57	39.5	801
6575	P-L	1990	11	15.31980	06	17	41.01	+29	39	14.8	801
6575	P-L	1990	11	15.35022	06	17	40.34	+29	39	20.0	801
6575	P-L	1990	12	13.21353	05	59	10.80	+30	41	12.5	801
6575	P-L	1990	12	13.23052	05	59	09.85	+30	41	13.6	801
6575	P-L	1990	12	15.23266	05	57	17.77	+30	43	44.2	801
6575	P-L	1990	12	15.24760	05	57	16.90	+30	43	44.8	801
1309	T-2	1990	11	20.28372	05	18	20.78	+24	01	25.0	801
1309	T-2	1990	11	20.29980	05	18	20.06	+24	01	25.1	801
1309	T-2	1990	12	15.19441	04	56	34.94	+23	56	08.2	801
1309	T-2	1990	12	15.21083	04	56	33.99	+23	56	07.5	801
1309	T-2	1990	12	18.15727	04	53	55.92	+23	54	07.8	801
1309	T-2	1990	12	18.17009	04	53	55.21	+23	54	07.2	801
4069	T-2	1990	11	15.01381	23	32	58.81	-08	59	19.5	801
4069	T-2	1990	11	15.04260	23	32	59.60	-08	59	14.6	801
4069	T-2	1990	11	19.99360	23	35	43.15	-08	42	28.6	801
4069	T-2	1990	11	20.01426	23	35	43.86	-08	42	24.0	801
4239	T-2	1990	11	20.04775	00	40	36.55	+02	59	25.1	801
4239	T-2	1990	11	20.10390	00	40	35.70	+02	59	27.9	801
1081	T-3	1990	11	19.26469	04	43	37.68	+18	03	46.6	801
1081	T-3	1990	11	19.29093	04	43	36.03	+18	03	35.7	801
1081	T-3	1990	11	20.26453	04	42	39.63	+17	57	07.7	801
1081	T-3	1990	11	20.28787	04	42	38.23	+17	56	58.3	801
1081	T-3	1990	12	15.17282	04	18	19.44	+15	23	11.5	801
1081	T-3	1990	12	15.18682	04	18	18.69	+15	23	07.1	801
3045	T-3	1990	12	14.30727	08	13	26.36	+38	56	14.1	801

3045	T-3	1990	12	14.32781	08	13	25.67	+38	56	21.5	801
3045	T-3	1990	12	17.30127	08	11	45.93	+39	13	38.4	801
3045	T-3	1990	12	17.32689	08	11	44.98	+39	13	47.2	801
4059	T-3	1990	12	20.28292	06	55	59.40	+26	57	14.5	801
4059	T-3	1990	12	20.29977	06	55	58.36	+26	57	17.3	801
4271	T-3	1990	11	15.22693	04	13	19.47	+20	48	20.2	801
4271	T-3	1990	11	15.25334	04	13	18.53	+20	48	19.6	801
4271	T-3	1990	11	21.27337	04	09	44.13	+20	45	58.0	801
4271	T-3	1990	11	21.29088	04	09	43.48	+20	45	57.6	801
4271	T-3	1990	12	14.14697	03	56	17.74	+20	34	51.7	801
4271	T-3	1990	12	14.17047	03	56	16.99	+20	34	51.1	801
4271	T-3	1990	12	15.13617	03	55	46.42	+20	34	25.8	801
4271	T-3	1990	12	15.16681	03	55	45.42	+20	34	25.2	801
5010	T-3	1990	12	14.15135	04	30	20.27	+06	30	50.1	801
5010	T-3	1990	12	14.20029	04	30	18.77	+06	30	49.3	801
5010	T-3	1990	12	15.17843	04	29	48.57	+06	30	39.0	801
5010	T-3	1990	12	15.20576	04	29	47.71	+06	30	38.7	801
243		1990	11	14.06593	22	33	36.91	-08	17	12.5	801
243		1990	11	14.08693	22	33	37.44	-08	17	09.2	801
243		1990	11	19.97001	22	36	34.01	-07	59	42.2	801
243		1990	11	19.99111	22	36	34.70	-07	59	37.9	801
243		1990	11	20.96940	22	37	07.97	-07	56	20.5	801
243		1990	11	20.99363	22	37	08.79	-07	56	15.4	801
243		1990	12	13.96400	22	54	43.21	-06	10	00.9	801
243		1990	12	13.97916	22	54	44.03	-06	09	55.7	801
243		1990	12	14.97694	22	55	40.29	-06	04	10.5	801
243		1990	12	14.98709	22	55	40.86	-06	04	06.9	801
944		1990	11	14.07300	00	18	00.69	+04	51	53.4	801
944		1990	11	14.08063	00	18	00.19	+04	51	59.2	801
944		1990	12	19.97973	00	01	52.13	+13	03	33.8	801
944		1990	12	20.00545	00	01	52.34	+13	03	56.3	801
2212		1990	12	15.28314	06	44	26.82	+42	32	39.9	801
2212		1990	12	15.28750	06	44	26.21	+42	32	43.1	801
2212		1990	12	20.25719	06	31	46.77	+43	32	49.7	801
2212		1990	12	20.26824	06	31	44.89	+43	32	57.3	801
4544		1990	12	14.44693	16	05	20.10	+55	12	59.4	801
4544		1990	12	14.44912	16	05	19.98	+55	13	06.4	801
4647		1990	11	15.00602	23	46	30.07	-04	00	05.5	801
4647		1990	11	15.05332	23	46	30.85	-04	00	05.1	801
4649		1990	11	16.12207	01	37	00.37	-09	26	46.8	801
4649		1990	11	16.15169	01	36	59.15	-09	26	35.4	801
4668		1990	11	14.12532	01	11	56.56	+22	48	42.2	801
4668		1990	11	14.14617	01	11	55.77	+22	48	34.1	801
4668		1990	11	16.10811	01	10	57.01	+22	37	05.5	801
4668		1990	11	16.12931	01	10	56.38	+22	36	58.2	801
4670		1990	11	20.16609	02	38	04.90	+24	49	07.8	801
4670		1990	11	20.18226	02	38	03.85	+24	49	02.0	801
4671		1990	11	19.12443	01	29	19.71	+15	47	27.1	801
4671		1990	11	19.16587	01	29	18.16	+15	47	18.5	801
4672		1990	11	20.09824	01	31	34.78	-10	22	32.7	801
4672		1990	11	20.12260	01	31	34.02	-10	22	28.1	801

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1974	FO	1990	08	16.21389	22	56	31.10	-10	25	01.2	18.3 809
1974	FO	1990	08	16.22708	22	56	30.33	-10	25	03.1	809

1974	FO	1990	08	16.24028	22	56	29.63	-10	25	05.7	809
1974	FO	1990	08	18.22361	22	54	45.73	-10	30	05.6	18.1 809
1974	FO	1990	08	18.23681	22	54	44.93	-10	30	07.9	809
1974	FO	1990	08	18.25000	22	54	44.19	-10	30	09.1	809
1979	MJ5	1990	11	16.32431	04	34	27.29	+14	41	11.4	809
1979	MJ5	1990	11	17.20007	04	33	38.24	+14	37	38.1	18.4 809
1980	YB	1990	10	16.23750	03	02	57.94	+08	43	33.9	809
1980	YB	1990	10	16.25069	03	02	57.23	+08	43	29.6	809
1980	YB	1990	10	16.26389	03	02	56.61	+08	43	27.0	809
1980	YB	1990	10	19.25139	03	00	35.50	+08	30	46.1	17.9 809
1981	EP26	1990	10	16.23750	03	06	36.97	+10	13	00.4	809
1981	EP26	1990	10	16.25069	03	06	36.41	+10	12	56.6	809
1981	EP26	1990	10	16.26389	03	06	35.64	+10	12	50.3	809
1983	WL	1990	10	16.29792	03	22	52.72	+09	15	51.2	809
1983	WL	1990	10	20.24444	03	19	55.39	+09	16	18.7	18.0 809
1983	WL	1990	10	20.27083	03	19	54.00	+09	16	19.1	809
1986	QG1	1990	10	16.23750	03	03	10.47	+09	34	55.2	19.5 809
1986	QG1	1990	10	16.25069	03	03	09.77	+09	34	51.1	809
1986	QG1	1990	10	16.26389	03	03	09.12	+09	34	47.9	809
1986	QG1	1990	10	19.25139	03	00	47.21	+09	21	54.6	18.7 809
1987	DP6	1990	10	16.23750	03	07	24.08	+08	25	25.1	18.7 809
1987	DP6	1990	10	16.25069	03	07	23.53	+08	25	21.8	809
1987	DP6	1990	10	16.26389	03	07	23.01	+08	25	18.3	809
1987	DP6	1990	10	19.25139	03	05	32.65	+08	11	16.0	18.5 809
1988	CT2	1990	11	14.14444	02	07	24.63	+07	53	51.2	809
1988	CT2	1990	11	14.15486	02	07	24.18	+07	53	49.3	809
1988	CT2	1990	11	14.16528	02	07	23.49	+07	53	48.0	809
1988	CT2	1990	11	17.15556	02	05	00.20	+07	44	14.9	18.2 809
1988	CT2	1990	11	17.16667	02	04	59.74	+07	44	12.0	809
1988	CT2	1990	11	17.17708	02	04	59.25	+07	44	10.2	809
1988	DR	1990	10	16.23750	02	59	06.70	+07	33	18.3	809
1988	DR	1990	10	16.25069	02	59	06.16	+07	33	11.5	809
1988	DR	1990	10	16.26389	02	59	05.64	+07	33	03.5	809
1988	DR	1990	10	19.25139	02	57	13.17	+07	03	35.4	18.4 809
1989	GT4	1990	11	19.16319	03	23	12.30	+14	28	58.6	17.3 809
1989	GT4	1990	11	19.17361	03	23	11.66	+14	28	55.4	809
1989	GT4	1990	11	19.18403	03	23	10.99	+14	28	52.0	809
1989	GT4	1990	11	22.16458	03	20	00.48	+14	14	44.5	809
1989	GT4	1990	11	22.17500	03	19	59.73	+14	14	39.9	809
1989	GT4	1990	11	22.18542	03	19	59.05	+14	14	37.8	809
1990	QY2	1990	08	20.23194	23	22	57.90	-05	25	49.6	18.5 809
1990	QY2	1990	08	20.24514	23	22	57.30	-05	25	53.0	809
1990	QY2	1990	08	20.25833	23	22	56.73	-05	25	55.5	809
1990	QY2	1990	08	26.20347	23	18	33.75	-05	48	23.7	18.6 809
1990	QY2	1990	08	26.21667	23	18	33.10	-05	48	26.9	809
1990	QY2	1990	08	26.22986	23	18	32.38	-05	48	28.8	809
1990	TK1	1990	11	14.14444	02	07	05.06	+07	54	48.9	809
1990	TK1	1990	11	14.15486	02	07	04.59	+07	54	46.9	809
1990	TK1	1990	11	14.16528	02	07	04.15	+07	54	45.2	809
1990	TK1	1990	11	17.15556	02	04	58.97	+07	45	58.6	17.0 809
1990	TK1	1990	11	17.16667	02	04	58.52	+07	45	56.7	809
1990	TK1	1990	11	17.17708	02	04	58.06	+07	45	55.1	809
1990	TL1	1990	11	14.14444	02	08	36.88	+07	30	20.1	809
1990	TL1	1990	11	14.15486	02	08	36.48	+07	30	16.3	809
1990	TL1	1990	11	14.16528	02	08	36.00	+07	30	12.6	809
1990	TL1	1990	11	17.15556	02	06	42.82	+07	13	01.9	17.2 809
1990	TL1	1990	11	17.16667	02	06	42.39	+07	12	58.6	809
1990	TL1	1990	11	17.17708	02	06	42.02	+07	12	54.7	809
1990	TM1	1990	10	16.23750	02	48	01.28	+08	35	08.6	809

1990	TM1	1990	10	16.25069	02	48	00.72	+08	35	06.4	809
1990	TM1	1990	10	16.26389	02	48	00.12	+08	35	03.4	809
1990	TM1	1990	10	19.25139	02	45	56.81	+08	26	29.9	18.4 809
1990	TH3	1990	10	16.23750	02	57	29.17	+09	11	44.1	809
1990	TH3	1990	10	16.25069	02	57	28.34	+09	11	46.6	809
1990	TH3	1990	10	16.26389	02	57	27.78	+09	11	48.6	809
1990	TH3	1990	10	19.25139	02	54	53.44	+09	19	16.6	18.6 809
1990	TJ3	1990	10	16.23750	02	58	10.06	+08	40	57.5	809
1990	TJ3	1990	10	16.25069	02	58	09.43	+08	40	55.0	809
1990	TJ3	1990	10	16.26389	02	58	08.74	+08	40	52.3	809
1990	TJ3	1990	10	19.25139	02	55	51.10	+08	32	09.6	18.1 809
1990	UF1	1990	11	14.17986	02	43	03.03	+13	59	56.1	17.2 809
1990	UF1	1990	11	14.19028	02	43	02.41	+13	59	54.9	809
1990	UF1	1990	11	14.20069	02	43	01.69	+13	59	54.5	809
1990	UF1	1990	11	20.12431	02	37	00.32	+13	52	56.4	17.5 809
1990	UF1	1990	11	20.13472	02	36	59.75	+13	52	55.6	809
1990	UF1	1990	11	20.14514	02	36	59.17	+13	52	55.0	809
1990	UH1	1990	11	15.18750	03	10	43.66	+03	15	53.4	16.5 809
1990	UH1	1990	11	15.19792	03	10	43.02	+03	15	56.8	809
1990	UH1	1990	11	15.20833	03	10	42.38	+03	15	59.6	809
1990	UH1	1990	11	17.22153	03	08	43.25	+03	26	37.0	809
1990	UH1	1990	11	17.23194	03	08	42.57	+03	26	40.6	809
1990	UH1	1990	11	17.24236	03	08	41.96	+03	26	44.0	809
1990	UP1	1990	11	20.12431	02	37	52.10	+13	24	22.1	17.2 809
1990	UP1	1990	11	20.13472	02	37	51.49	+13	24	24.1	809
1990	UP1	1990	11	20.14514	02	37	50.80	+13	24	27.4	809
1990	UU1	1990	11	15.18750	03	12	24.69	+02	24	23.7	17.8 809
1990	UU1	1990	11	15.19792	03	12	24.18	+02	24	18.3	809
1990	UU1	1990	11	15.20833	03	12	23.64	+02	24	12.6	809
1990	UU1	1990	11	17.22153	03	10	43.56	+02	07	07.8	809
1990	UU1	1990	11	17.23194	03	10	42.96	+02	07	02.7	809
1990	UU1	1990	11	17.24236	03	10	42.31	+02	06	55.7	809
1990	UX1	1990	11	15.18750	03	17	05.90	+03	31	31.1	17.3 809
1990	UX1	1990	11	15.19792	03	17	05.40	+03	31	26.6	809
1990	UX1	1990	11	15.20833	03	17	04.94	+03	31	21.6	809
1990	UY1	1990	11	15.18750	03	13	54.92	+02	54	38.5	17.6 809
1990	UY1	1990	11	15.19792	03	13	54.30	+02	54	38.5	809
1990	UY1	1990	11	15.20833	03	13	53.59	+02	54	40.2	809
1990	UY1	1990	11	17.22153	03	11	51.08	+02	55	59.4	809
1990	UY1	1990	11	17.23194	03	11	50.40	+02	55	59.7	809
1990	UY1	1990	11	17.24236	03	11	49.73	+02	55	59.9	809
1990	UB2	1990	10	16.23750	02	51	08.39	+07	03	57.7	809
1990	UB2	1990	10	16.25069	02	51	07.53	+07	03	54.8	809
1990	UB2	1990	10	16.26389	02	51	06.72	+07	03	52.3	809
1990	UB2	1990	10	19.25139	02	48	08.27	+06	53	00.7	18.3 809
1990	UJ2	1990	11	18.20625	03	36	09.10	+10	47	15.0	18.3 809
1990	UJ2	1990	11	20.13264	03	34	18.82	+10	42	51.4	809
1990	UM2	1990	10	16.23750	02	55	01.33	+08	46	22.8	809
1990	UM2	1990	10	16.25069	02	55	00.69	+08	46	23.1	809
1990	UM2	1990	10	16.26389	02	55	00.05	+08	46	21.9	809
1990	UM2	1990	10	19.25139	02	52	40.72	+08	43	24.9	18.6 809
1990	UN3	1990	10	16.23750	03	04	14.31	+07	45	39.8	19.6 809
1990	UN3	1990	10	16.25069	03	04	13.86	+07	45	32.9	809
1990	UN3	1990	10	16.26389	03	04	13.38	+07	45	25.6	809
1990	UN3	1990	10	19.25139	03	02	43.09	+07	23	51.3	19.0 809
1990	UP3	1990	10	16.23750	03	07	08.61	+09	03	51.4	19.3 809
1990	UP3	1990	10	16.25069	03	07	07.92	+09	03	49.1	809
1990	UP3	1990	10	16.26389	03	07	07.19	+09	03	45.6	809
1990	UP3	1990	10	19.25139	03	04	40.45	+08	52	47.1	18.5 809

1990	US3		1990	10	16.23750	03	07	46.56	+08	29	17.7	19.0	809
1990	US3		1990	10	16.25069	03	07	45.97	+08	29	14.7		809
1990	US3		1990	10	16.26389	03	07	45.47	+08	29	12.6		809
1990	US3		1990	10	19.25139	03	05	49.07	+08	21	51.9	18.6	809
1990	UJ4	*	1990	10	16.23750	02	47	47.21	+07	18	52.9		809
1990	UJ4		1990	10	16.25069	02	47	46.43	+07	18	51.8		809
1990	UJ4		1990	10	16.26389	02	47	45.63	+07	18	50.4		809
1990	UJ4		1990	10	19.25139	02	44	58.35	+07	13	18.5	18.7	809
1990	UK4	*	1990	10	16.23750	02	48	16.96	+06	23	42.5		809
1990	UK4		1990	10	16.25069	02	48	16.47	+06	23	34.4		809
1990	UK4		1990	10	16.26389	02	48	15.94	+06	23	26.9		809
1990	UK4		1990	10	19.25139	02	46	31.29	+05	53	50.7	18.7	809
1990	UL4	*	1990	10	16.23750	02	48	19.74	+06	35	16.6		809
1990	UL4		1990	10	16.25069	02	48	18.93	+06	35	13.8		809
1990	UL4		1990	10	16.26389	02	48	18.19	+06	35	12.1		809
1990	UL4		1990	10	19.25139	02	45	38.18	+06	25	12.3	18.6	809
1990	UM4	*	1990	10	16.23750	02	49	02.52	+06	52	13.3		809
1990	UM4		1990	10	16.25069	02	49	01.88	+06	52	11.3		809
1990	UM4		1990	10	16.26389	02	49	01.31	+06	52	09.8		809
1990	UM4		1990	10	19.25139	02	47	46.37	+06	51	08.5	19.7	809
1990	UN4	*	1990	10	16.23750	02	49	16.77	+09	40	48.2		809
1990	UN4		1990	10	16.25069	02	49	16.11	+09	40	32.3		809
1990	UN4		1990	10	16.26389	02	49	15.40	+09	40	14.5		809
1990	UN4		1990	10	19.25139	02	46	52.60	+08	38	34.2	18.6	809
1990	UO4	*	1990	10	16.23750	02	49	55.17	+07	20	12.9		809
1990	UO4		1990	10	16.25069	02	49	54.54	+07	20	05.7		809
1990	UO4		1990	10	16.26389	02	49	53.92	+07	19	58.6		809
1990	UO4		1990	10	19.25139	02	47	48.49	+06	53	49.4	18.7	809
1990	UP4	*	1990	10	16.23750	02	50	00.00	+08	45	07.6		809
1990	UP4		1990	10	16.25069	02	49	59.46	+08	45	01.7		809
1990	UP4		1990	10	16.26389	02	49	58.94	+08	44	55.9		809
1990	UP4		1990	10	19.25139	02	48	03.91	+08	22	17.2	18.6	809
1990	UQ4	*	1990	10	16.23750	02	50	08.19	+08	27	10.8		809
1990	UQ4		1990	10	16.25069	02	50	07.54	+08	27	05.3		809
1990	UQ4		1990	10	16.26389	02	50	06.91	+08	27	01.2		809
1990	UQ4		1990	10	19.25139	02	47	58.55	+08	12	00.8	18.7	809
1990	UR4	*	1990	10	16.23750	02	50	25.97	+08	26	36.5		809
1990	UR4		1990	10	16.25069	02	50	25.18	+08	26	33.9		809
1990	UR4		1990	10	16.26389	02	50	24.49	+08	26	31.6		809
1990	UR4		1990	10	19.25139	02	47	48.13	+08	16	41.8	18.6	809
1990	US4	*	1990	10	16.23750	02	50	51.43	+07	54	52.1	18.7	809
1990	US4		1990	10	16.25069	02	50	50.67	+07	54	50.3		809
1990	US4		1990	10	16.26389	02	50	49.87	+07	54	48.3		809
1990	US4		1990	10	19.25139	02	47	55.07	+07	46	13.4	18.4	809
1990	UT4	*	1990	10	16.23750	02	52	33.61	+07	06	25.3		809
1990	UT4		1990	10	16.25069	02	52	33.00	+07	06	18.2		809
1990	UT4		1990	10	16.26389	02	52	32.41	+07	06	13.9		809
1990	UT4		1990	10	19.25139	02	50	24.58	+06	45	07.2	18.4	809
1990	UU4	*	1990	10	16.23750	02	52	37.24	+06	04	12.0		809
1990	UU4		1990	10	16.25069	02	52	36.46	+06	04	13.6		809
1990	UU4		1990	10	16.26389	02	52	35.73	+06	04	13.9		809
1990	UU4		1990	10	19.25139	02	49	48.59	+06	07	57.1	18.5	809
1990	UV4	*	1990	10	16.23750	02	52	40.00	+09	38	53.7	19.5	809
1990	UV4		1990	10	16.25069	02	52	39.32	+09	38	50.8		809
1990	UV4		1990	10	16.26389	02	52	38.65	+09	38	48.3		809
1990	UV4		1990	10	19.25139	02	50	21.59	+09	28	17.7	19.0	809
1990	UW4	*	1990	10	16.23750	02	53	03.66	+07	34	26.6		809
1990	UW4		1990	10	16.25069	02	53	02.48	+07	34	32.4		809
1990	UW4		1990	10	16.26389	02	53	01.24	+07	34	37.6		809

1990	UW4		1990	10	19.25139	02	48	37.60	+07	57	19.3	18.7	809
1990	UX4	*	1990	10	16.23750	02	54	17.92	+06	46	31.0		809
1990	UX4		1990	10	16.25069	02	54	17.15	+06	46	28.3		809
1990	UX4		1990	10	16.26389	02	54	16.56	+06	46	25.6		809
1990	UX4		1990	10	19.25139	02	51	57.24	+06	38	28.6	18.6	809
1990	UY4	*	1990	10	16.23750	02	56	47.69	+06	01	49.7		809
1990	UY4		1990	10	16.25069	02	56	47.01	+06	01	47.5		809
1990	UY4		1990	10	16.26389	02	56	46.30	+06	01	45.9		809
1990	UY4		1990	10	19.25139	02	54	22.52	+05	54	55.5	18.4	809
1990	UZ4	*	1990	10	16.23750	02	57	51.63	+06	48	40.9		809
1990	UZ4		1990	10	16.25069	02	57	51.09	+06	48	37.3		809
1990	UZ4		1990	10	16.26389	02	57	50.56	+06	48	36.5		809
1990	UZ4		1990	10	19.25139	02	55	52.10	+06	41	00.0	18.7	809
1990	UA5	*	1990	10	16.23750	02	58	05.78	+05	57	58.3		809
1990	UA5		1990	10	16.25069	02	58	05.30	+05	57	52.0		809
1990	UA5		1990	10	16.26389	02	58	04.54	+05	57	43.1		809
1990	UA5		1990	10	19.25139	02	56	06.51	+05	33	04.1	18.8	809
1990	UB5	*	1990	10	16.23750	02	58	28.76	+06	20	05.6	19.4	809
1990	UB5		1990	10	16.25069	02	58	28.10	+06	20	01.3		809
1990	UB5		1990	10	16.26389	02	58	27.50	+06	19	56.7		809
1990	UB5		1990	10	19.25139	02	56	18.13	+06	06	27.5	19.2	809
1990	UC5	*	1990	10	16.23750	02	58	38.87	+06	38	21.9		809
1990	UC5		1990	10	16.25069	02	58	38.13	+06	38	17.1		809
1990	UC5		1990	10	16.26389	02	58	37.51	+06	38	12.7		809
1990	UC5		1990	10	19.25139	02	56	19.13	+06	22	04.3	18.8	809
1990	UD5	*	1990	10	16.23750	02	59	06.03	+08	37	20.6		809
1990	UD5		1990	10	16.25069	02	59	05.13	+08	37	15.6		809
1990	UD5		1990	10	16.26389	02	59	04.33	+08	37	11.8		809
1990	UD5		1990	10	19.25139	02	56	49.47	+08	25	37.1	19.0	809
1990	UE5	*	1990	10	16.23750	02	59	53.31	+07	08	01.8		809
1990	UE5		1990	10	16.25069	02	59	52.68	+07	07	43.2		809
1990	UE5		1990	10	16.26389	02	59	52.08	+07	07	24.5		809
1990	UE5		1990	10	19.25139	02	57	38.54	+05	55	50.9	18.6	809
1990	UF5	*	1990	10	16.23750	03	00	45.31	+09	58	20.7		809
1990	UF5		1990	10	16.25069	03	00	44.80	+09	58	17.0		809
1990	UF5		1990	10	16.26389	03	00	44.34	+09	58	13.3		809
1990	UF5		1990	10	19.25139	02	58	56.56	+09	43	25.1	18.7	809
1990	UG5	*	1990	10	16.23750	03	01	52.29	+09	02	59.1		809
1990	UG5		1990	10	16.25069	03	01	51.83	+09	02	51.4		809
1990	UG5		1990	10	16.26389	03	01	51.17	+09	02	46.2		809
1990	UG5		1990	10	19.25139	03	00	05.16	+08	39	01.0	19.5	809
1990	UH5	*	1990	10	16.23750	03	02	02.62	+09	23	03.8		809
1990	UH5		1990	10	16.25069	03	02	02.00	+09	22	58.6		809
1990	UH5		1990	10	16.26389	03	02	01.36	+09	22	54.8		809
1990	UH5		1990	10	19.25139	02	59	44.30	+09	06	53.3	18.4	809
1990	UJ5	*	1990	10	16.23750	03	02	25.78	+07	21	05.7		809
1990	UJ5		1990	10	16.25069	03	02	25.26	+07	21	00.5		809
1990	UJ5		1990	10	16.26389	03	02	24.68	+07	20	55.4		809
1990	UJ5		1990	10	19.25139	03	00	33.19	+07	02	22.9	18.6	809
1990	UK5	*	1990	10	16.23750	03	02	54.95	+05	40	56.4		809
1990	UK5		1990	10	16.25069	03	02	54.44	+05	40	52.3		809
1990	UK5		1990	10	16.26389	03	02	53.90	+05	40	49.0		809
1990	UK5		1990	10	19.25139	03	01	10.11	+05	28	26.1	18.7	809
1990	UL5	*	1990	10	16.23750	03	03	14.80	+07	58	04.6		809
1990	UL5		1990	10	16.25069	03	03	14.17	+07	57	58.8		809
1990	UL5		1990	10	16.26389	03	03	13.58	+07	57	54.0		809
1990	UL5		1990	10	19.25139	03	00	55.81	+07	38	53.6	19.1	809
1990	UM5	*	1990	10	16.23750	03	03	18.85	+06	47	16.3		809
1990	UM5		1990	10	16.25069	03	03	18.05	+06	47	18.1		809

1990	UM5		1990	10	16.26389	03	03	17.30	+06	47	19.6	809
1990	UM5		1990	10	19.25139	03	00	31.71	+06	52	41.6	18.2 809
1990	UN5	*	1990	10	16.23750	03	04	13.87	+06	09	40.5	809
1990	UN5		1990	10	16.25069	03	04	13.39	+06	09	38.0	809
1990	UN5		1990	10	16.26389	03	04	12.79	+06	09	34.7	809
1990	UN5		1990	10	19.25139	03	02	30.49	+06	00	10.6	18.8 809
1990	UO5	*	1990	10	16.23750	03	04	25.28	+06	01	08.9	809
1990	UO5		1990	10	16.25069	03	04	24.56	+06	01	08.6	809
1990	UO5		1990	10	16.26389	03	04	23.91	+06	01	08.7	809
1990	UO5		1990	10	19.25139	03	02	00.92	+06	00	15.9	18.5 809
1990	UP5	*	1990	10	16.23750	03	07	03.71	+05	59	08.5	18.7 809
1990	UP5		1990	10	16.25069	03	07	03.18	+05	59	05.5	809
1990	UP5		1990	10	16.26389	03	07	02.63	+05	59	02.4	809
1990	UP5		1990	10	19.25139	03	05	03.99	+05	47	17.8	18.7 809
1990	UQ5	*	1990	10	16.23750	03	07	18.78	+09	21	29.2	19.5 809
1990	UQ5		1990	10	16.25069	03	07	18.16	+09	21	27.5	809
1990	UQ5		1990	10	16.26389	03	07	17.59	+09	21	26.4	809
1990	UQ5		1990	10	19.25139	03	05	02.31	+09	16	59.8	19.0 809
1990	VL2		1990	11	18.25625	03	50	41.93	+14	12	56.8	17.2 809
1990	VL2		1990	11	18.26667	03	50	41.32	+14	12	54.7	809
1990	VL2		1990	11	18.27708	03	50	40.76	+14	12	53.3	809
1990	VL2		1990	11	19.20208	03	49	46.46	+14	10	22.2	809
1990	VL2		1990	11	19.21250	03	49	45.87	+14	10	20.5	809
1990	VL2		1990	11	19.22292	03	49	45.25	+14	10	19.4	809
1990	VM2		1990	11	18.25625	03	52	42.82	+14	04	52.4	17.7 809
1990	VM2		1990	11	18.26667	03	52	42.17	+14	04	51.8	809
1990	VM2		1990	11	18.27708	03	52	41.62	+14	04	50.6	809
1990	VM2		1990	11	19.20208	03	51	48.48	+14	03	58.3	809
1990	VM2		1990	11	19.21250	03	51	47.89	+14	03	58.2	809
1990	VM2		1990	11	19.22292	03	51	47.21	+14	03	57.9	809
1990	VG3		1990	11	15.21111	04	08	15.70	+12	42	08.3	18.5 809
1990	VT6	*	1990	11	14.14444	02	11	15.11	+08	30	45.3	809
1990	VT6		1990	11	14.15486	02	11	14.63	+08	30	42.5	809
1990	VT6		1990	11	14.16528	02	11	14.23	+08	30	38.2	809
1990	VT6		1990	11	17.15556	02	09	07.11	+08	18	09.1	18.0 809
1990	VT6		1990	11	17.16667	02	09	06.69	+08	18	05.6	809
1990	VT6		1990	11	17.17708	02	09	06.27	+08	18	01.6	809
1990	VU6	*	1990	11	14.14444	02	12	19.36	+07	52	51.6	809
1990	VU6		1990	11	14.15486	02	12	18.70	+07	52	50.2	809
1990	VU6		1990	11	14.16528	02	12	18.19	+07	52	46.5	809
1990	VU6		1990	11	17.15556	02	10	03.27	+07	47	01.0	18.0 809
1990	VU6		1990	11	17.16667	02	10	02.77	+07	46	56.0	809
1990	VU6		1990	11	17.17708	02	10	02.39	+07	46	52.3	809
1990	VV6	*	1990	11	14.14444	02	12	29.62	+08	10	42.5	809
1990	VV6		1990	11	14.15486	02	12	29.13	+08	10	39.2	809
1990	VV6		1990	11	14.16528	02	12	28.47	+08	10	35.0	809
1990	VV6		1990	11	17.15556	02	10	25.49	+08	00	16.9	18.2 809
1990	VV6		1990	11	17.16667	02	10	25.10	+08	00	15.2	809
1990	VV6		1990	11	17.17708	02	10	24.64	+08	00	11.0	809
1990	VW6	*	1990	11	14.14444	02	12	34.01	+07	40	22.6	809
1990	VW6		1990	11	14.15486	02	12	33.62	+07	40	21.8	809
1990	VW6		1990	11	14.16528	02	12	33.05	+07	40	20.4	809
1990	VW6		1990	11	17.15556	02	10	00.46	+07	36	35.1	17.7 809
1990	VW6		1990	11	17.16667	02	09	59.89	+07	36	33.5	809
1990	VW6		1990	11	17.17708	02	09	59.39	+07	36	32.6	809
1990	VX6	*	1990	11	15.18750	03	12	21.67	+03	27	11.4	18.5 809
1990	VX6		1990	11	15.19792	03	12	21.20	+03	27	12.6	809
1990	VX6		1990	11	15.20833	03	12	20.72	+03	27	11.7	809
1990	VX6		1990	11	17.22153	03	10	34.79	+03	26	37.3	18.5 809

1990	VX6		1990	11	17.23194	03	10	34.31	+03	26	35.9		809
1990	VX6		1990	11	17.24236	03	10	33.92	+03	26	36.2		809
1990	WQ2		1990	11	17.20007	04	42	42.04	+16	35	52.4	18.0	809
1990	WE3	*	1990	11	18.25625	03	49	01.05	+14	19	05.7	18.0	809
1990	WE3		1990	11	18.26667	03	49	00.41	+14	19	02.9		809
1990	WE3		1990	11	18.27708	03	48	59.82	+14	19	00.6		809
1990	WE3		1990	11	19.20208	03	48	05.06	+14	15	56.9		809
1990	WE3		1990	11	19.21250	03	48	04.43	+14	15	54.0		809
1990	WE3		1990	11	19.22292	03	48	03.70	+14	15	52.4		809
1990	WF3	*	1990	11	18.25625	03	49	32.66	+14	35	35.8	17.5	809
1990	WF3		1990	11	18.26667	03	49	32.02	+14	35	33.5		809
1990	WF3		1990	11	18.27708	03	49	31.43	+14	35	31.3		809
1990	WF3		1990	11	19.20208	03	48	32.53	+14	32	43.9		809
1990	WF3		1990	11	19.21250	03	48	31.94	+14	32	42.2		809
1990	WF3		1990	11	19.22292	03	48	31.23	+14	32	41.1		809
1990	WG3	*	1990	11	18.25625	03	54	20.05	+13	46	59.5	17.4	809
1990	WG3		1990	11	18.26667	03	54	19.55	+13	46	59.4		809
1990	WG3		1990	11	18.27708	03	54	19.01	+13	46	59.5		809
1990	WG3		1990	11	19.20208	03	53	29.16	+13	46	35.1		809
1990	WG3		1990	11	19.21250	03	53	28.65	+13	46	34.7		809
1990	WG3		1990	11	19.22292	03	53	28.08	+13	46	35.3		809
1990	WH3	*	1990	11	19.16319	03	24	02.42	+14	11	45.6	17.8	809
1990	WH3		1990	11	19.17361	03	24	01.86	+14	11	39.5		809
1990	WH3		1990	11	19.18403	03	24	01.27	+14	11	33.9		809
1990	WH3		1990	11	22.16458	03	21	10.91	+13	50	56.2		809
1990	WH3		1990	11	22.17500	03	21	10.15	+13	50	52.3		809
1990	WH3		1990	11	22.18542	03	21	08.99	+13	50	45.0		809
1990	WJ3	*	1990	11	19.16319	03	27	16.49	+14	19	21.1	17.6	809
1990	WJ3		1990	11	19.17361	03	27	15.86	+14	19	17.5		809
1990	WJ3		1990	11	19.18403	03	27	15.22	+14	19	14.4		809
1990	WJ3		1990	11	22.16458	03	24	07.54	+14	03	57.0		809
1990	WJ3		1990	11	22.17500	03	24	06.96	+14	03	52.0		809
1990	WJ3		1990	11	22.18542	03	24	06.28	+14	03	49.4		809
1990	WK3	*	1990	11	19.16319	03	28	12.89	+13	39	31.7	17.5	809
1990	WK3		1990	11	19.17361	03	28	12.32	+13	39	27.0		809
1990	WK3		1990	11	19.18403	03	28	11.80	+13	39	22.7		809
1990	WK3		1990	11	22.16458	03	25	54.65	+13	21	16.2		809
1990	WK3		1990	11	22.17500	03	25	54.08	+13	21	11.2		809
1990	WK3		1990	11	22.18542	03	25	53.62	+13	21	07.3		809
1990	WL3		1990	11	17.20007	04	53	29.60	+14	23	05.2	18.5	809
1990	WL3	*	1990	11	19.27778	04	51	35.26	+14	26	30.6		809
1990	WL3		1990	11	19.28819	04	51	34.71	+14	26	31.7		809
1990	WL3		1990	11	19.30347	04	51	33.89	+14	26	34.0		809
1990	WL3		1990	11	22.23681	04	48	45.28	+14	31	47.3	17.6	809
1990	WL3		1990	11	22.24722	04	48	44.61	+14	31	49.1		809
1990	WL3		1990	11	22.25799	04	48	43.96	+14	31	50.3		809
1990	WM3	*	1990	11	19.27778	04	52	37.79	+14	22	53.4		809
1990	WM3		1990	11	19.28819	04	52	37.37	+14	22	49.7		809
1990	WM3		1990	11	19.30347	04	52	36.50	+14	22	43.7		809
1990	WM3		1990	11	22.23681	04	50	12.16	+14	05	31.6	17.7	809
1990	WM3		1990	11	22.24722	04	50	11.62	+14	05	27.4		809
1990	WM3		1990	11	22.25799	04	50	11.12	+14	05	23.5		809
1990	WN3	*	1990	11	19.27778	04	54	38.80	+14	01	40.8		809
1990	WN3		1990	11	19.28819	04	54	38.21	+14	01	36.8		809
1990	WN3		1990	11	19.30347	04	54	37.34	+14	01	31.8		809
1990	WN3		1990	11	22.23681	04	52	01.45	+13	45	35.9	17.5	809
1990	WN3		1990	11	22.24722	04	52	00.89	+13	45	32.3		809
1990	WN3		1990	11	22.25799	04	52	00.25	+13	45	29.4		809
1990	WO3	*	1990	11	21.20347	03	25	48.60	+09	18	46.4	18.0	809

1990	WO3		1990	11	22.21042	03	24	50.68	+09	14	59.2	809
1990	WP3	*	1990	11	21.20347	03	26	39.97	+09	49	26.2	18.5 809
1990	WP3		1990	11	22.21042	03	25	33.33	+09	47	18.7	809
1990	WQ3	*	1990	11	21.20347	03	27	33.25	+09	34	30.0	18.6 809
1990	WQ3		1990	11	22.21042	03	26	27.37	+09	33	18.6	809
1990	WR3	*	1990	11	21.23264	05	14	41.85	+15	29	29.7	16.8 809
1990	WR3		1990	11	21.25069	05	14	41.02	+15	29	20.9	809
1990	WR3		1990	11	21.26111	05	14	40.50	+15	29	16.3	809
1990	WR3		1990	11	22.26806	05	13	51.47	+15	21	10.6	809
1990	WR3		1990	11	22.27847	05	13	50.98	+15	21	05.7	809
1990	WR3		1990	11	22.28889	05	13	50.48	+15	21	00.7	809
1990	WS3	*	1990	11	21.23264	05	16	05.26	+15	01	51.2	17.6 809
1990	WS3		1990	11	21.25069	05	16	04.32	+15	01	49.1	809
1990	WS3		1990	11	21.26111	05	16	03.71	+15	01	47.7	809
1990	WS3		1990	11	22.26806	05	15	12.46	+14	59	03.2	809
1990	WS3		1990	11	22.27847	05	15	11.94	+14	59	01.1	809
1990	WS3		1990	11	22.28889	05	15	11.39	+14	59	00.2	809
1990	WT3	*	1990	11	21.23264	05	16	41.58	+15	07	58.8	17.8 809
1990	WT3		1990	11	21.25069	05	16	40.82	+15	07	52.8	809
1990	WT3		1990	11	21.26111	05	16	40.27	+15	07	48.8	809
1990	WT3		1990	11	22.26806	05	15	53.69	+15	02	02.4	809
1990	WT3		1990	11	22.27847	05	15	53.22	+15	01	59.3	809
1990	WT3		1990	11	22.28889	05	15	52.73	+15	01	55.0	809
1990	WU3	*	1990	11	21.23264	05	18	34.95	+15	06	35.1	17.0 809
1990	WU3		1990	11	21.25069	05	18	34.10	+15	06	35.0	809
1990	WU3		1990	11	21.26111	05	18	33.56	+15	06	34.5	809
1990	WU3		1990	11	22.26806	05	17	43.79	+15	05	56.0	809
1990	WU3		1990	11	22.27847	05	17	43.27	+15	05	56.5	809
1990	WU3		1990	11	22.28889	05	17	42.69	+15	05	56.0	809
1990	WV3	*	1990	11	21.27153	05	28	51.36	+15	41	57.5	17.2 809
1990	WV3		1990	11	21.28194	05	28	50.84	+15	41	56.5	809
1990	WV3		1990	11	23.22083	05	27	10.86	+15	38	14.0	809
1990	WV3		1990	11	23.23108	05	27	10.37	+15	38	13.0	809
1990	WV3		1990	11	23.24167	05	27	09.71	+15	38	11.7	809
1990	WW3	*	1990	11	21.27153	05	30	23.81	+15	04	26.1	17.3 809
1990	WW3		1990	11	21.28194	05	30	23.28	+15	04	23.4	809
1990	WW3		1990	11	23.22083	05	28	54.52	+14	57	47.0	809
1990	WW3		1990	11	23.23108	05	28	53.98	+14	57	44.0	809
1990	WW3		1990	11	23.24167	05	28	53.45	+14	57	41.7	809
1990	WX3		1990	11	16.32431	04	54	04.90	+15	08	20.9	809
1990	WX3		1990	11	17.20007	04	53	19.14	+15	10	17.6	17.5 809
1990	WX3		1990	11	19.27778	04	51	23.74	+15	15	11.7	16.8 809
1990	WX3		1990	11	19.28819	04	51	23.14	+15	15	13.4	809
1990	WX3		1990	11	19.30347	04	51	22.25	+15	15	15.5	809
1990	WC4	*	1990	11	16.32431	04	36	08.44	+15	16	17.0	809
1990	WC4		1990	11	17.20007	04	35	17.29	+15	16	27.8	19.4 809
1990	WD4	*	1990	11	16.32431	04	37	38.48	+16	27	46.4	809
1990	WD4		1990	11	17.20007	04	36	49.28	+16	31	40.4	18.7 809
1990	WE4	*	1990	11	16.32431	04	37	42.18	+15	01	52.8	809
1990	WE4		1990	11	17.20007	04	36	45.74	+15	01	42.7	19.2 809
1990	WF4	*	1990	11	16.32431	04	37	51.58	+12	54	55.0	809
1990	WF4		1990	11	17.20007	04	37	10.06	+12	55	09.9	18.8 809
1990	WG4	*	1990	11	16.32431	04	38	12.66	+17	32	21.2	809
1990	WG4		1990	11	17.20007	04	37	25.53	+17	32	00.7	18.5 809
1990	WH4	*	1990	11	16.32431	04	38	20.17	+16	49	00.3	809
1990	WH4		1990	11	17.20007	04	37	27.86	+16	50	44.2	18.7 809
1990	WJ4	*	1990	11	16.32431	04	38	20.87	+12	37	59.9	809
1990	WJ4		1990	11	17.20007	04	37	32.59	+12	36	19.7	19.0 809
1990	WK4	*	1990	11	16.32431	04	38	49.19	+17	34	20.7	809

1990	WK4		1990	11	17.20007	04	38	06.49	+17	34	45.9	18.7	809
1990	WL4	*	1990	11	16.32431	04	39	29.71	+15	10	39.0		809
1990	WL4		1990	11	17.20007	04	38	37.81	+15	09	24.8	18.6	809
1990	WM4	*	1990	11	16.32431	04	39	37.95	+13	37	43.0		809
1990	WM4		1990	11	17.20007	04	38	44.47	+13	36	50.2	19.3	809
1990	WN4	*	1990	11	16.32431	04	39	59.80	+13	11	51.4		809
1990	WN4		1990	11	17.20007	04	39	08.48	+13	15	34.5	18.5	809
1990	WO4	*	1990	11	16.32431	04	40	02.74	+16	41	21.5		809
1990	WO4		1990	11	17.20007	04	39	23.62	+16	37	12.6	18.3	809
1990	WP4	*	1990	11	16.32431	04	40	03.22	+16	07	21.5		809
1990	WP4		1990	11	17.20007	04	39	17.94	+16	07	32.8	18.2	809
1990	WQ4	*	1990	11	16.32431	04	41	59.64	+16	29	49.9		809
1990	WQ4		1990	11	17.20007	04	41	03.90	+16	28	01.2	18.5	809
1990	WR4	*	1990	11	16.32431	04	42	08.74	+13	39	32.6		809
1990	WR4		1990	11	17.20007	04	41	16.88	+13	39	16.0	19.5	809
1990	WS4	*	1990	11	16.32431	04	42	21.53	+17	22	06.8		809
1990	WS4		1990	11	17.20007	04	41	37.72	+17	20	05.7	18.2	809
1990	WT4	*	1990	11	16.32431	04	42	28.82	+15	35	09.6		809
1990	WT4		1990	11	17.20007	04	41	38.92	+15	32	20.5	18.8	809
1990	WU4	*	1990	11	16.32431	04	42	33.30	+16	16	51.5		809
1990	WU4		1990	11	17.20007	04	41	19.52	+16	09	31.8	19.0	809
1990	WV4	*	1990	11	16.32431	04	44	08.38	+16	00	59.9		809
1990	WV4		1990	11	17.20007	04	43	24.52	+15	57	00.4	17.8	809
1990	WW4	*	1990	11	16.32431	04	45	31.54	+13	18	01.6		809
1990	WW4		1990	11	17.20007	04	44	43.89	+13	14	36.9	19.0	809
1990	WX4	*	1990	11	16.32431	04	45	57.47	+14	04	03.0		809
1990	WX4		1990	11	17.20007	04	45	07.55	+14	05	49.7	18.7	809
1990	WY4	*	1990	11	16.32431	04	46	49.79	+16	32	34.3		809
1990	WY4		1990	11	17.20007	04	46	03.19	+16	30	58.5	18.4	809
1990	WZ4	*	1990	11	16.32431	04	47	05.16	+16	23	04.8		809
1990	WZ4		1990	11	17.20007	04	46	15.45	+16	22	03.2	18.7	809
1990	WA5	*	1990	11	16.32431	04	48	48.23	+14	39	07.1		809
1990	WA5		1990	11	17.20007	04	48	05.36	+14	38	00.4	18.2	809
1990	WB5	*	1990	11	16.32431	04	49	39.24	+14	20	14.6		809
1990	WB5		1990	11	17.20007	04	48	56.70	+14	22	44.3	18.7	809
1990	WC5	*	1990	11	16.32431	04	50	00.51	+16	59	19.7		809
1990	WC5		1990	11	17.20007	04	49	06.23	+17	00	16.8	18.6	809
1990	WD5	*	1990	11	16.32431	04	51	09.27	+16	46	38.4		809
1990	WD5		1990	11	17.20007	04	50	26.82	+16	48	06.1	18.0	809
1990	WE5	*	1990	11	16.32431	04	51	39.03	+14	37	36.9		809
1990	WE5		1990	11	17.20007	04	50	50.48	+14	36	54.3	18.8	809
1990	WF5	*	1990	11	16.32431	04	51	52.49	+13	29	05.7		809
1990	WF5		1990	11	17.20007	04	51	08.77	+13	28	47.6	18.6	809
1990	WG5	*	1990	11	16.32431	04	52	00.50	+15	13	55.6		809
1990	WG5		1990	11	17.20007	04	51	08.27	+15	19	52.1	18.6	809
2098	P-L		1990	10	16.29792	03	21	03.86	+08	42	08.0		809
2098	P-L		1990	10	20.24444	03	18	50.92	+07	56	41.6	18.0	809
2098	P-L		1990	10	20.27083	03	18	49.87	+07	56	23.0		809
4			1990	11	21.20347	03	24	23.45	+09	32	19.4	7.0	809
4			1990	11	22.21042	03	23	20.82	+09	30	53.8		809
60			1990	11	19.23750	03	08	17.78	+12	58	33.9	9.0	809
60			1990	11	19.24792	03	08	17.12	+12	58	30.2		809
60			1990	11	19.25833	03	08	16.48	+12	58	26.6		809
60			1990	11	23.11736	03	04	41.30	+12	37	23.4		809
60			1990	11	23.12778	03	04	40.68	+12	37	20.1		809
60			1990	11	23.14028	03	04	40.03	+12	37	16.6		809
67			1990	11	19.23750	03	13	28.31	+12	46	53.8	10.0	809
67			1990	11	19.24792	03	13	27.63	+12	46	50.0		809
67			1990	11	19.25833	03	13	26.99	+12	46	46.8		809

67	1990	11	23.11736	03	09	47.43	+12	25	21.9	809
67	1990	11	23.12778	03	09	46.80	+12	25	18.7	809
67	1990	11	23.14028	03	09	46.10	+12	25	14.6	809
119	1990	11	16.32431	04	41	00.67	+15	58	16.6	809
119	1990	11	17.20007	04	40	15.68	+15	54	16.7	16.5 809
496	1990	11	20.12431	02	40	43.32	+12	53	27.5	15.5 809
496	1990	11	20.13472	02	40	42.71	+12	53	23.7	809
496	1990	11	20.14514	02	40	42.11	+12	53	20.1	809
612	1990	10	16.23750	03	08	40.48	+08	55	13.8	809
612	1990	10	16.25069	03	08	39.95	+08	55	05.2	809
612	1990	10	16.26389	03	08	39.46	+08	54	56.7	809
638	1990	10	16.23750	03	01	08.54	+06	43	54.8	809
638	1990	10	16.25069	03	01	07.98	+06	43	51.6	809
638	1990	10	16.26389	03	01	07.31	+06	43	48.7	809
638	1990	10	19.25139	02	58	55.96	+06	32	28.8	17.5 809
922	1990	11	18.25625	03	50	56.07	+13	39	08.4	16.5 809
922	1990	11	18.26667	03	50	55.51	+13	39	05.1	809
922	1990	11	18.27708	03	50	54.93	+13	39	02.3	809
922	1990	11	19.20208	03	50	02.80	+13	33	55.8	809
922	1990	11	19.21250	03	50	02.25	+13	33	52.7	809
922	1990	11	19.22292	03	50	01.59	+13	33	49.7	809
1085	1990	11	21.20347	03	23	47.65	+08	55	14.7	16.0 809
1085	1990	11	22.21042	03	23	00.75	+08	52	52.1	809
1988	1990	10	16.23750	03	08	13.29	+09	44	28.5	809
1988	1990	10	16.25069	03	08	12.57	+09	44	25.8	809
1988	1990	10	16.26389	03	08	11.95	+09	44	23.3	809
2244	1990	11	16.32431	04	51	42.30	+13	41	11.2	809
2244	1990	11	17.20007	04	51	01.19	+13	41	27.7	17.0 809
2244	1990	11	19.27778	04	49	18.47	+13	42	22.4	809
2244	1990	11	19.28819	04	49	17.91	+13	42	22.5	809
2244	1990	11	19.30347	04	49	17.11	+13	42	23.0	809
2244	1990	11	22.23681	04	46	44.77	+13	44	11.7	16.5 809
2244	1990	11	22.24722	04	46	44.24	+13	44	12.6	809
2244	1990	11	22.25799	04	46	43.64	+13	44	13.0	809
2249	1990	11	22.16458	03	27	03.34	+12	55	11.1	809
2249	1990	11	22.17500	03	27	02.87	+12	55	09.2	809
2249	1990	11	22.18542	03	27	02.34	+12	55	08.1	809
2271	1990	11	19.16319	03	23	32.69	+13	13	17.0	16.5 809
2271	1990	11	19.17361	03	23	32.14	+13	13	15.5	809
2271	1990	11	19.18403	03	23	31.52	+13	13	13.6	809
2271	1990	11	22.16458	03	20	51.07	+13	04	26.5	809
2271	1990	11	22.17500	03	20	50.56	+13	04	24.2	809
2271	1990	11	22.18542	03	20	49.97	+13	04	23.0	809
2298	1990	11	17.20007	04	45	32.74	+15	51	24.7	17.8 809
2391	1990	11	19.16319	03	26	24.99	+13	20	51.3	16.0 809
2391	1990	11	19.17361	03	26	24.38	+13	20	49.4	809
2391	1990	11	19.18403	03	26	23.75	+13	20	46.8	809
2391	1990	11	22.16458	03	23	30.96	+13	08	49.9	809
2391	1990	11	22.17500	03	23	30.38	+13	08	46.6	809
2391	1990	11	22.18542	03	23	29.77	+13	08	44.9	809
2625	1990	11	16.32431	04	39	54.71	+15	15	08.7	809
2625	1990	11	17.20007	04	38	59.62	+15	13	16.9	17.9 809
2720	1990	11	19.16319	03	27	04.11	+13	14	46.0	17.4 809
2720	1990	11	19.17361	03	27	03.43	+13	14	43.0	809
2720	1990	11	19.18403	03	27	02.67	+13	14	41.7	809
2720	1990	11	22.16458	03	23	56.23	+13	08	46.9	809
2720	1990	11	22.17500	03	23	55.63	+13	08	44.8	809
2720	1990	11	22.18542	03	23	54.92	+13	08	44.3	809
2873	1990	11	18.25625	03	48	21.13	+13	08	52.4	17.0 809

2873		1990 11 18.26667	03	48	20.51	+13	08	52.1	809
2873		1990 11 18.27708	03	48	19.77	+13	08	50.3	809
2873		1990 11 19.20208	03	47	17.57	+13	07	02.8	809
2873		1990 11 19.21250	03	47	16.94	+13	07	02.0	809
2873		1990 11 19.22292	03	47	16.19	+13	07	01.5	809
3246		1990 10 16.23750	02	57	41.96	+05	32	30.5	809
3246		1990 10 16.25069	02	57	41.45	+05	32	23.2	809
3246		1990 10 16.26389	02	57	40.93	+05	32	15.8	809
3246		1990 10 19.25139	02	55	54.90	+05	05	12.0	18.3 809
3670		1990 10 16.23750	02	56	56.99	+07	13	08.3	809
3670		1990 10 16.25069	02	56	56.38	+07	13	05.9	809
3670		1990 10 16.26389	02	56	55.78	+07	13	02.3	809
3670		1990 10 19.25139	02	54	44.50	+07	01	18.1	18.5 809
3870		1990 11 21.20347	03	27	15.51	+08	33	57.3	17.5 809
3870		1990 11 22.21042	03	26	22.56	+08	28	21.5	809
3876		1990 11 16.32431	04	47	00.05	+12	59	12.2	809
3876		1990 11 17.20007	04	46	18.89	+12	59	01.1	18.1 809
4016		1990 11 14.17986	02	37	29.07	+14	09	52.5	17.5 809
4016		1990 11 14.19028	02	37	28.32	+14	09	49.9	809
4016		1990 11 14.20069	02	37	27.70	+14	09	47.4	809
4219		1990 11 19.16319	03	24	53.04	+13	41	56.9	809
4219		1990 11 19.17361	03	24	52.52	+13	41	55.5	809
4219		1990 11 19.18403	03	24	51.91	+13	41	53.2	809
4219		1990 11 22.16458	03	21	55.24	+13	31	38.1	809
4219		1990 11 22.17500	03	21	54.57	+13	31	34.1	809
4219		1990 11 22.18542	03	21	53.91	+13	31	30.8	809
4333		1990 10 16.23750	03	06	40.66	+10	01	29.6	809
4333		1990 10 16.25069	03	06	40.02	+10	01	25.3	809
4333		1990 10 16.26389	03	06	39.33	+10	01	21.1	809

814 North Scituate
R. L. Napier, 3 Oak Ridge Road, North Scituate RI 02857, U.S.A.
Observer R. L. Napier
Measurer W. S. Penhallow
Long. and Parallax 288.42, -318, -283 (see MPC 16637)

1108		1990 10 15.14167	01	36	45.99	+32	46	24.8	814
1108		1990 10 17.12361	01	34	57.14	+32	10	03.0	814

871 Akou
K. Kawanishi, 2045-1, Kariya, Akou, Hyogo-Ken 678-02, Japan
0.20-m f/4.8 reflector
AGK3, SAO

1971	UM	1990 11 23.59375	03	40	19.16	+22	07	09.1	16.0 871
1990	XA	1990 12 16.66632	06	13	54.07	+24	53	03.0	15.5 871
1990	XA	1990 12 22.64340	06	07	52.79	+24	39	25.2	871

875 Yorii
M. Arai, 2695, Tomita, Saitama, 369-12 Japan
Observers M. Arai, H. Mori
Measurer H. Mori
0.30-m f/3.8 reflector

1988	TU2	1990 12 07.64167	04	47	30.65	+21	54	49.4	16 875
1988	TU2	1990 12 07.65833	04	47	30.13	+21	54	44.7	875
1988	TU2	1990 12 10.51262	04	45	47.60	+21	43	56.5	16 875
1988	TU2	1990 12 10.52847	04	45	46.95	+21	43	52.5	875
1990	VV2	1990 11 22.57361	02	58	33.89	+15	29	34.0	16.5 875
1990	VW2	1990 11 22.57361	03	01	17.77	+15	07	04.6	17 875
1990	XB	1990 12 10.60833	05	11	24.93	+25	42	28.5	16.5 875
1990	XB	1990 12 10.62361	05	11	23.95	+25	42	31.2	875

1990	XB		1990	12	13.59201	05	08	27.55	+25	49	28.5	16	875
1990	XB		1990	12	13.61354	05	08	26.12	+25	49	31.3		875
1990	XC	*	1990	12	08.59965	04	47	06.82	+30	56	59.3	16.5	875
1990	XC		1990	12	08.61771	04	47	05.27	+30	56	57.9		875
1990	XC		1990	12	10.54664	04	44	50.48	+30	54	17.6	16	875
1990	XC		1990	12	10.56458	04	44	49.11	+30	54	16.5		875
1990	XC		1990	12	16.60972	04	38	01.32	+30	42	01.0	16	875
1990	XC		1990	12	16.62847	04	38	00.01	+30	41	57.8		875
1990	XC		1990	12	21.54306	04	33	02.13	+30	28	24.2	16	875
1990	XC		1990	12	21.56250	04	33	00.95	+30	28	20.8		875
1990	YE	*	1990	12	19.62153	07	00	41.29	+22	57	04.2	17	875
1990	YE		1990	12	19.65347	07	00	39.82	+22	57	10.3		875
1990	YE		1990	12	21.62049	06	59	04.87	+23	01	07.6	17	875
1990	YE		1990	12	21.64861	06	59	03.54	+23	01	10.7		875
1990	YE		1991	01	07.55498	06	44	00.75	+23	33	42.0	17	875
1990	YE		1991	01	07.57465	06	43	59.64	+23	33	44.4		875
1991	AJ	*	1991	01	09.63194	08	11	46.75	+21	19	23.4	16.5	875
1991	AJ		1991	01	09.64965	08	11	45.82	+21	19	31.3		875
1991	AJ		1991	01	10.58264	08	11	02.37	+21	25	54.5	16.5	875
1991	AJ		1991	01	10.61840	08	11	00.71	+21	26	09.8		875
1991	AK	*	1991	01	09.65833	08	21	47.08	+21	18	47.0	17	875
1991	AK		1991	01	09.67812	08	21	46.11	+21	18	50.8		875
1991	AK		1991	01	10.62743	08	20	53.66	+21	21	15.9	17	875
1991	AK		1991	01	10.64687	08	20	52.59	+21	21	20.4		875

877 Okutama
S. Hayakawa, 1-31-33, Nagano, Gyoda-Shi, Saitama-Ken, 361 Japan
Observer T. Hioki
Measurers S. Hayakawa, T. Hioki
0.30-m f/3.8 hyperboloid astrocamera
AGK3, SAOC, GSC

1940	GO		1990	12	07.53507	04	13	57.96	+12	41	10.4	15.0	877
1940	GO		1990	12	07.55625	04	13	56.64	+12	41	14.8		877
1940	GO		1990	12	10.64375	04	10	44.39	+12	53	21.6	15.0	877
1940	GO		1990	12	10.66042	04	10	43.36	+12	53	25.8		877
1990	UJ1		1990	11	12.58056	01	34	57.00	+13	50	15.5	16.5	877
1990	UJ1		1990	11	12.59896	01	34	56.45	+13	50	03.6		877
1990	UK1		1990	11	12.61424	01	46	34.58	+16	08	30.4	16.0	877
1990	UK1		1990	11	12.63310	01	46	33.84	+16	08	21.4		877
1990	VQ1		1990	11	22.61215	01	30	08.95	+11	20	39.8	16.5	877
1990	VQ1		1990	11	22.63490	01	30	08.50	+11	20	29.1		877
1990	VQ1		1990	11	23.56997	01	29	46.87	+11	14	09.6	16.0	877
1990	VQ1		1990	11	23.59028	01	29	46.38	+11	13	58.5		877
1990	VD2		1990	11	23.60903	03	23	18.07	+17	42	07.3	16.0	877
1990	VD2		1990	11	23.63160	03	23	16.81	+17	42	02.2		877
1990	VE2		1990	11	24.55382	03	37	08.49	+17	58	10.1	16.0	877
1990	VE2		1990	11	24.57118	03	37	07.26	+17	58	04.3		877
1990	WF		1990	11	24.58657	03	44	27.68	+11	00	52.6	15.0	877
1990	WF		1990	11	24.60434	03	44	26.44	+11	00	51.5		877
1990	WF		1990	12	24.58472	03	23	26.00	+11	31	07.8	16.5	877
1990	WF		1990	12	24.61806	03	23	25.47	+11	31	14.8		877
1990	WM2		1990	11	22.76076	04	55	32.27	+19	07	05.6	15.5	877
1990	WM2		1990	11	22.77992	04	55	31.37	+19	06	54.3		877
1990	WM2		1990	12	07.58368	04	42	09.65	+16	27	42.8	14.5	877
1990	WM2		1990	12	07.59514	04	42	09.01	+16	27	35.5		877
1990	WR2		1990	12	07.58368	04	44	53.12	+15	46	22.0	16.0	877
1990	WR2		1990	12	10.71146	04	41	46.07	+16	05	57.1		877
1990	WR2		1990	12	10.72569	04	41	45.18	+16	06	00.9		877
1990	XB1		1991	01	08.66042	08	22	35.63	+30	01	48.2	15.0	877

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1990 XB1    1991 01 08.67674  08 22 34.80  +30 01 57.7                    877
1990 XB1    1991 01 09.66389  08 21 46.70  +30 10 53.0                    877
1990 XB1    1991 01 09.68819  08 21 45.38  +30 11 05.7                    877
1990 YD   * 1990 12 18.73438  05 14 02.76  +12 35 06.5           15.0     877
1990 YD     1990 12 18.75694  05 14 01.50  +12 35 04.5                    877
1990 YD     1990 12 19.71024  05 13 10.47  +12 33 05.1           15.0     877
1990 YD     1990 12 19.75515  05 13 07.88  +12 32 59.6                    877
1990 YD     1990 12 23.64687  05 09 49.52  +12 26 33.5           15.0     877
1990 YD     1990 12 23.66806  05 09 48.42  +12 26 31.8                    877
1990 YD     1991 01 06.56736  05 01 03.59  +12 25 21.3           15.0     877
1990 YD     1991 01 06.58819  05 01 02.99  +12 25 22.3                    877
1990 YR   * 1990 12 23.75660  06 50 11.69  +34 14 25.0           16.0     877
1990 YR     1990 12 23.78958  06 50 09.39  +34 14 31.1                    877
1990 YR     1990 12 24.63819  06 49 14.68  +34 17 08.1           16.5     877
1990 YR     1990 12 27.77743  06 45 47.06  +34 25 44.9                    877
1990 YR     1990 12 27.79479  06 45 46.24  +34 25 44.7                    877
1990 YR     1991 01 06.63304  06 34 52.13  +34 41 56.9           16.0     877
1990 YR     1991 01 06.65145  06 34 51.36  +34 41 57.8                    877
1991 AN   * 1991 01 09.62396  07 59 29.68  +30 25 15.0           16.5     877
1991 AN     1991 01 09.64740  07 59 27.75  +30 25 21.5                    877
1991 AN     1991 01 13.79965  07 54 16.06  +30 39 10.1                    877
1991 AN     1991 01 13.82118  07 54 14.68  +30 39 13.0                    877
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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

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1990 VB4    1990 12 08.53507  04 04 41.66  +17 44 03.7           16.5     881
1990 VB4    1990 12 08.54896  04 04 40.87  +17 43 59.5                    881
1990 VB4    1990 12 18.51528  03 57 37.09  +17 07 20.6           16.5     881
1990 VB4    1990 12 18.54306  03 57 35.71  +17 07 14.4                    881
1990 WM2    1990 12 05.53229  04 44 03.31  +16 49 23.9           15.5     881
1990 WM2    1990 12 05.54618  04 44 02.53  +16 49 15.1                    881
1990 XE   * 1990 12 07.58576  06 13 40.29  +19 23 41.6           15.5     881
1990 XE     1990 12 07.60938  06 13 38.84  +19 23 36.9                    881
1990 XE     1990 12 08.56424  06 12 45.30  +19 20 14.1           15.5     881
1990 XE     1990 12 08.57813  06 12 44.46  +19 20 11.3                    881
1990 XE     1990 12 18.56354  06 02 28.01  +18 46 16.3           15       881
1990 XE     1990 12 18.57743  06 02 27.09  +18 46 14.1                    881
1990 XK     1990 12 12.60521  06 55 27.2   +16 02 41            16     N 881
1990 XK     1990 12 12.62882  06 55 26.2   +16 02 32                   N 881
4080        1990 11 16.69132  05 01 51.31  +20 01 03.5           16.5     881
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883 Shizuoka
M. Kizawa, 1458-10, Minami Numagami, Shizuoka 420, Japan
Observer M. Kizawa
0.31-m f/6.4 reflector

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3523        1990 10 19.65825  04 08 35.97  +19 47 01.7           16       883
3523        1990 10 19.66834  04 08 35.47  +19 47 05.6                    883
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885 JCPM Yakiimo Station
T. Urata, 6-1, Muramatsuhara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan
Observers A. Natori, T. Urata
Measurer T. Urata
0.20-m f/4.0 hyperboloid astrocamera

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1940 GO     1990 12 10.52674  04 10 52.00  +12 52 55.3           15       885
1940 GO     1990 12 10.54236  04 10 50.97  +12 52 58.0                    885
```

1990	TH12		1990	11	22.63750	03	46	28.54	+20	39	19.3	16.5	885
1990	TH12		1990	11	22.64618	03	46	27.90	+20	39	17.4		885
1990	TH12		1990	11	22.65486	03	46	27.44	+20	39	11.7		885
1990	VE		1990	11	26.57222	03	43	49.40	+17	36	37.8	16	885
1990	VE		1990	11	26.58854	03	43	48.60	+17	36	37.2		885
1990	WW2		1990	12	10.60486	05	45	20.86	+19	14	18.6	16	885
1990	WW2		1990	12	14.55486	05	40	42.90	+19	54	13.1	15.5	885
1990	WW2		1990	12	14.57014	05	40	41.91	+19	54	20.8		885
1990	WW2		1990	12	23.57413	05	30	23.98	+21	21	56.7	15.5	885
1990	WW2		1990	12	23.59861	05	30	22.27	+21	22	11.0		885
1990	XF		1990	12	14.59306	06	59	06.31	+29	06	04.2	16	885
1990	XF		1990	12	14.61597	06	59	05.29	+29	06	05.0		885
1990	XF		1990	12	16.54028	06	57	17.14	+28	59	35.2	15.5	885
1990	XF		1990	12	16.55556	06	57	16.17	+28	59	30.8		885
1990	XK	*	1990	12	10.62153	06	57	02.07	+16	12	43.7	16	885
1990	XK		1990	12	10.64444	06	57	00.98	+16	12	36.8		885
1990	XK		1990	12	14.57778	06	53	47.49	+15	52	54.2	16	885
1990	XK		1990	12	14.60069	06	53	46.35	+15	52	46.9		885
1990	XK		1990	12	25.65920	06	43	11.48	+15	01	25.4	15.5	885
1990	XK		1990	12	25.67431	06	43	10.60	+15	01	22.1		885
1990	XK		1991	01	05.52083	06	31	52.20	+14	18	21.6	15	885
1990	XK		1991	01	05.53611	06	31	51.25	+14	18	18.1		885
1990	XL		1990	12	14.63264	06	42	43.1	+24	17	31	16 N	885
1990	XL		1990	12	14.65556	06	42	42.1	+24	17	34	N	885
1990	XP	*	1990	12	14.64028	06	55	55.68	+13	34	48.3	16	885
1990	XP		1990	12	14.66319	06	55	54.42	+13	34	45.4		885
1990	XP		1990	12	16.59028	06	54	08.97	+13	33	16.2	16	885
1990	XP		1990	12	16.60486	06	54	08.13	+13	33	13.2		885
1990	XP		1991	01	05.52083	06	32	58.25	+13	48	23.8	16	885
1990	XP		1991	01	05.53611	06	32	57.30	+13	48	24.0		885
1990	XY	*	1990	12	14.63264	06	50	31.54	+25	01	09.0	16	885
1990	XY		1990	12	14.65556	06	50	30.12	+25	01	04.6		885
1990	XB1		1991	01	06.61042	08	24	12.10	+29	43	08.2	15	885
1990	XB1		1991	01	06.62569	08	24	11.28	+29	43	16.5		885
1990	YH	*	1990	12	22.64097	07	55	31.49	+13	05	53.7	16	885
1990	YH		1990	12	22.66389	07	55	30.80	+13	06	00.9		885
1990	YH		1990	12	23.62292	07	54	55.40	+13	09	29.3	16	885
1990	YH		1990	12	23.64653	07	54	54.59	+13	09	35.8		885
1990	YH		1991	01	06.52917	07	44	43.87	+14	10	50.5	16.5	885
1990	YH		1991	01	06.54688	07	44	43.11	+14	10	56.8		885
1990	YJ	*	1990	12	22.64097	08	01	09.27	+11	49	04.3	16	885
1990	YJ		1990	12	22.66389	08	01	08.22	+11	49	06.0		885
1990	YJ		1990	12	23.65486	08	00	30.47	+11	50	07.7	16	885
1990	YJ		1990	12	23.66250	08	00	30.30	+11	50	06.6		885
1991	AB		1991	01	09.68958	08	26	52.85	+15	55	08.0	16.5	885
1991	AB		1991	01	09.70486	08	26	52.11	+15	55	16.8		885
2831			1990	11	26.57222	03	46	32.08	+16	51	58.5	15	885
2831			1990	11	26.58854	03	46	30.99	+16	51	58.3		885

886 Susono
T. Furuta, 17-2 Mitsuike, Kagiya, Tokai 477, Japan
Observers M. Akiyama, T. Furuta
Measurer T. Furuta
0.25-m f/4.2 Wright-Schmidt camera
AGK3

1983	TU		1990	11	17.59514	04	17	47.70	+24	55	05.2	15.5	886
1983	TU		1990	11	17.60694	04	17	47.04	+24	55	05.3		886
1983	WH		1990	12	10.62483	06	01	30.0	+20	25	13	16.0	886

1983	WH		1990	12	10.63819	06	01	28.9	+20	25	10	886
1990	XE		1990	12	14.57240	06	06	43.69	+18	59	25.4	15.5 886
1990	XE		1990	12	14.58368	06	06	42.88	+18	59	21.5	886
1990	XF		1990	12	25.60764	06	47	37.67	+28	23	27.6	15.0 886
1990	XF		1990	12	25.61840	06	47	37.16	+28	23	25.5	886
1990	XT		1990	12	16.53507	06	00	34.8	+25	23	58	16.0 886
1990	XT		1990	12	16.54635	06	00	33.9	+25	23	57	886
1990	XY		1990	12	19.66493	06	45	14.75	+24	41	00.7	16.0 886
1990	XY		1990	12	19.67674	06	45	13.87	+24	40	58.6	886
1990	YF		1990	12	23.63351	07	06	09.6	+20	18	10	15.5 886
1990	YF		1990	12	23.64444	07	06	08.9	+20	18	08	886
1990	YF		1990	12	24.54878	07	05	17.7	+20	13	34	16.0 886
1990	YF		1990	12	24.56007	07	05	16.9	+20	13	32	886
1990	YG		1991	01	05.59375	07	56	08.3	+18	49	11	16.0 886
1990	YG		1991	01	05.60503	07	56	07.4	+18	49	16	886
1990	YG		1991	01	06.57465	07	55	07.1	+18	55	49	886
1990	YG		1991	01	06.58646	07	55	06.4	+18	55	55	886
1456			1990	12	19.66493	06	45	20.5	+25	06	18	16.0 886

887 Ojima
T. Urata, 6-1, Muramatsuhara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan
Observers T. Niijima, T. Urata
Measurer T. Urata
0.30-m f/5.8 reflector, 0.16-m f/3.3 hyperboloid astrocamera
AGK3

1990	VE4		1990	12	14.50914	03	28	56.63	+24	40	37.8	16.5 887
1990	VE4		1990	12	14.53715	03	28	55.26	+24	40	43.0	887
1990	VE4		1990	12	18.52951	03	26	03.09	+24	55	21.1	17 887
1990	VE4		1990	12	18.53981	03	26	02.87	+24	55	26.0	887

889 Karasuyama
T. Urata, 6-1, Muramatsubara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan
Observers S. Inoda, T. Urata
Measurer T. Urata
0.31-m f/5.6 reflector
AGK3

1990	VH3		1990	11	23.58785	03	56	33.84	+23	41	53.4	16.5	I 889
1990	VH3		1990	11	23.61007	03	56	32.61	+23	41	46.0		889
1990	WZ3		1990	11	23.59896	03	43	30.01	+23	36	52.3	16	889
1990	WZ3		1990	11	23.62118	03	43	28.66	+23	36	40.8		889
1990	XD	*	1990	12	07.51771	04	20	24.14	+25	13	36.8	16.5	889
1990	XD		1990	12	07.53993	04	20	22.78	+25	13	31.5		889
1990	XD		1990	12	08.54479	04	19	22.26	+25	09	11.3	16.5	889
1990	XL	*	1990	12	13.63021	06	43	21.96	+24	20	51.7	16.5	889
1990	XX	*	1990	12	13.54896	04	17	26.45	+24	59	28.2	16.5	889
1990	XX		1990	12	13.57326	04	17	24.86	+24	59	23.9		889
1990	XX		1990	12	19.55729	04	11	17.29	+24	41	55.8	17	889
1990	XX		1990	12	19.58090	04	11	15.95	+24	41	51.0		889
1990	YF	*	1990	12	19.61493	07	09	48.45	+20	38	31.8	16.5	889
1990	YF		1990	12	19.63715	07	09	47.29	+20	38	25.5		889
1990	YF		1990	12	23.67465	07	06	06.98	+20	17	58.5	16.5	889
1990	YF		1990	12	23.69688	07	06	05.69	+20	17	52.7		889
1990	YF		1991	01	07.55313	06	51	14.75	+19	06	43.3	16.5	889
1990	YF		1991	01	07.57569	06	51	13.55	+19	06	37.8		889
1991	AB	*	1991	01	07.59722	08	28	39.52	+15	38	32.8	16	889
1991	AB		1991	01	07.61806	08	28	38.37	+15	38	42.0		889
1991	AB		1991	01	07.64826	08	28	36.85	+15	38	58.8		889
1703			1990	12	19.61493	07	10	53.96	+20	45	29.5	16	889
1703			1990	12	19.63715	07	10	52.53	+20	45	35.5		889

1703		1990	12	23.67465	07	06	30.67	+20	59	19.5	16 889
1703		1990	12	23.69688	07	06	29.08	+20	59	24.0	889

894 Kiyosato
S. Miyasaka, 3-8-501, 4 Chome, Nagayama, Tama, Tokyo 206, Japan
Observer S. Miyasaka
0.25-m reflector
AGK3, SAOC

1966	CF	1990	11	11.61230	04	19	27.42	+08	42	45.0	894
1966	CF	1990	11	11.63836	04	19	25.76	+08	42	42.1	894
1966	CF	1990	11	22.65997	04	08	24.39	+08	26	52.7	894
1966	CF	1990	11	22.68648	04	08	22.46	+08	26	53.9	894
1977	EM5	1990	11	23.60939	02	32	19.05	-00	34	06.7	F 894
1977	EM5	1990	11	23.62973	02	32	18.52	-00	34	13.4	894
1981	EA28	1990	12	19.61723	05	19	00.92	+36	02	08.2	894
1981	EA28	1990	12	19.63747	05	18	59.23	+36	02	06.6	894
1981	PK	1990	12	22.67660	06	50	48.13	+22	09	03.8	894
1981	PK	1990	12	22.69813	06	50	46.48	+22	09	00.9	894
1983	AF2	1990	11	23.68862	05	59	29.35	+62	47	00.4	894
1983	AF2	1990	11	23.71426	05	59	26.95	+62	46	58.5	894
1983	AF2	1990	12	16.71151	05	14	01.84	+59	25	47.6	894
1983	AF2	1990	12	16.73237	05	13	59.15	+59	25	23.5	894
1983	CC	1990	12	19.76964	09	16	04.69	+03	22	43.2	894
1983	CC	1990	12	19.79719	09	16	04.62	+03	22	57.1	894
1984	BK	1990	11	17.63319	05	16	43.03	+29	07	52.2	F 894
1984	BK	1990	11	17.65645	05	16	41.61	+29	07	53.7	F 894
1984	BK	1990	11	22.69793	05	12	02.64	+29	01	52.7	894
1984	BK	1990	12	16.58784	04	45	30.64	+27	49	50.4	894
1984	BK	1990	12	16.60781	04	45	29.26	+27	49	44.9	894
1984	BK	1990	12	16.64853	04	45	26.57	+27	49	34.6	894
1986	EE5	1990	12	15.70855	06	10	07.24	+21	45	14.7	894
1986	EE5	1990	12	15.73163	06	10	05.89	+21	45	14.3	894
1986	EE5	1990	12	16.74460	06	09	12.64	+21	45	32.3	894
1986	EE5	1990	12	16.77054	06	09	10.95	+21	45	32.6	894
1986	WE	1990	12	15.79211	07	26	12.18	+21	28	29.3	894
1986	WE	1990	12	15.81201	07	26	11.59	+21	28	34.7	894
1986	WG	1990	12	19.73333	08	25	06.11	-11	46	25.9	894
1986	WG	1990	12	19.75784	08	25	05.80	-11	47	00.2	894
1988	DA	1990	12	19.68282	05	54	51.29	+32	04	28.8	I 894
1988	DA	1990	12	19.70552	05	54	49.54	+32	04	28.5	894
1990	UD	1990	10	20.75163	02	13	39.11	+06	41	17.8	894
1990	UD	1990	10	26.67070	02	07	40.97	+06	37	26.6	894
1990	UD	1990	10	26.69461	02	07	39.42	+06	37	30.1	894
19		1990	12	15.70855	06	13	21.43	+21	00	43.5	894
19		1990	12	15.73163	06	13	19.80	+21	00	42.7	894
19		1990	12	16.74460	06	12	14.93	+21	00	23.1	894
19		1990	12	16.77054	06	12	13.24	+21	00	22.5	894
1040		1990	12	15.79211	07	23	52.46	+22	10	53.8	894
1040		1990	12	15.81201	07	23	51.50	+22	10	46.6	894
3204		1990	12	15.70855	06	11	38.26	+22	16	37.0	894
3204		1990	12	16.74460	06	10	42.23	+22	17	47.1	894
3204		1990	12	16.77054	06	10	40.90	+22	17	49.8	894

896 Yatsugatake South Base Observatory
O. Muramatsu, 119-1, 2-8 Sakurazutsumi, Musashino, Tokyo 180, Japan
Observers Y. Kushida, R. Kushida, O. Muramatsu, S. Izumikawa
Measurers O. Muramatsu, Y. Kushida
0.20-m f/4.0 reflector
AGK3

1978	XQ		1990	12	25.72049	07	34	41.78	+20	17	19.5	17.0	896
1978	XQ		1990	12	25.73438	07	34	41.19	+20	17	20.7		896
1983	TU		1990	11	15.69236	04	20	05.32	+24	53	07.5	16	896
1990	UE1		1990	11	12.66944	01	55	29.35	+12	13	09.9	16.5	896
1990	UE1		1990	11	12.69722	01	55	28.31	+12	13	02.5		896
1990	VZ		1990	11	14.56215	03	30	46.56	+20	01	35.6	16.5	896
1990	VZ		1990	11	14.59271	03	30	44.64	+20	01	33.0		896
1990	VA1		1990	12	08.55903	03	23	36.36	+24	25	45.9		896
1990	VC4		1990	12	08.48333	03	53	37.75	+16	28	32.1		896
1990	VC4		1990	12	08.51875	03	53	35.76	+16	28	35.4		896
1990	VC4		1990	12	21.66563	03	43	29.56	+16	58	34.8	17	896
1990	VC4		1990	12	21.69201	03	43	28.69	+16	58	38.9		896
1990	XF	*	1990	12	08.57465	07	04	00.10	+29	23	53.3	16.5	896
1990	XF		1990	12	08.61215	07	03	58.43	+29	23	47.7		896
1990	XF		1990	12	10.62963	07	02	27.85	+29	18	13.5	16.0	896
1990	XF		1990	12	13.56285	07	00	01.79	+29	09	23.5	16.0	896
1990	XF		1990	12	13.59340	06	59	59.96	+29	09	17.6		896
1990	XF		1990	12	16.82083	06	57	00.50	+28	58	36.8		896
1990	XF		1990	12	16.83611	06	56	59.51	+28	58	33.4		896
1991	AC	*	1991	01	08.61250	07	59	19.92	+24	19	40.9	17	896
1991	AC		1991	01	08.64931	07	59	17.72	+24	19	47.7		896
1991	AC		1991	01	09.62118	07	58	24.57	+24	22	59.4	17	896
1991	AC		1991	01	09.64896	07	58	23.01	+24	23	07.3		896
1991	AD	*	1991	01	08.66250	07	59	35.41	+13	45	26.3	16.5	896
1991	AD		1991	01	08.69063	07	59	33.77	+13	45	25.1		896
1991	AD		1991	01	09.55139	07	58	43.12	+13	45	18.6		896
1991	AD		1991	01	09.58576	07	58	41.22	+13	45	17.5		896
1991	AK		1991	01	10.67813	08	20	50.82	+21	21	25.3	17	896
1991	AK		1991	01	10.71458	08	20	48.85	+21	21	30.4		896
1991	AL	*	1991	01	09.74931	08	27	03.9	+21	14	29	16 E	896
1991	AL		1991	01	10.67813	08	26	15.76	+21	21	19.9		896
1991	AL		1991	01	10.71458	08	26	13.79	+21	21	33.4		896
2357			1990	12	21.66563	03	41	48.21	+16	43	27.0	17	896
2357			1990	12	21.69201	03	41	47.61	+16	43	26.6		896

898 Fujieda
M. Kizawa, 1458-10, Minami Numagami, Shizuoka-Ken 420, Japan
Observers H. Shiozawa, M. Kizawa
Measurer M. Kizawa
0.20-m f/4.0 hyperboloid astro-camera, 0.20-m f/4.9 reflector

1990	UF3		1990	11	22.50268	03	49	08.28	+23	28	50.2	16.5	898
1990	UF3		1990	11	22.54112	03	49	05.37	+23	28	47.4		898
1990	VX1		1990	11	17.63150	04	05	45.43	+21	28	17.2	16	898
1990	VX1		1990	11	17.65712	04	05	43.77	+21	28	09.8		898
1990	VX1		1990	12	07.56494	03	45	38.67	+19	58	40.6	16	898
1990	VX1		1990	12	07.58085	03	45	37.99	+19	58	39.6		898
1990	VJ3		1990	11	22.48929	03	35	55.29	+25	28	17.4	16	898
1990	VJ3		1990	11	22.52958	03	35	52.97	+25	28	02.1		898
1990	VJ3		1990	12	07.52053	03	23	40.8	+23	55	19	16.5 F	898
1990	VJ3		1990	12	07.54531	03	23	39.6	+23	55	13	F	898
1990	VA7	*	1990	11	12.46786	03	47	57.31	+25	52	19.2	16.5	898
1990	VA7		1990	11	12.49061	03	47	56.23	+25	52	20.0		898
1990	VA7		1990	11	17.56296	03	42	53.65	+26	02	56.8	16	898
1990	VA7		1990	11	17.58672	03	42	52.01	+26	02	58.5		898
1990	VA7		1990	11	22.48929	03	37	53.94	+26	11	24.2	16	898
1990	VA7		1990	11	22.52958	03	37	51.27	+26	11	24.6		898
1990	VA7		1990	12	07.50685	03	23	15.58	+26	26	56.2	16	898
1990	VA7		1990	12	07.53289	03	23	14.25	+26	26	57.2		898
508			1990	12	07.52053	03	24	03.45	+24	15	02.7		898

508	1990	12	07.54531	03	24	02.37	+24	15	03.1	898
847	1990	12	07.56494	03	41	39.46	+21	28	20.7	898
847	1990	12	07.58085	03	41	38.71	+21	28	17.6	898
1483	1990	12	07.56494	03	40	15.68	+18	31	49.5	898
1483	1990	12	07.58085	03	40	14.51	+18	31	51.6	898
1835	1990	12	07.56494	03	38	38.46	+20	45	15.8	898
1835	1990	12	07.58085	03	38	37.80	+20	45	15.2	898
2971	1990	12	07.56494	03	45	18.60	+17	31	57.7	16 898
2971	1990	12	07.58085	03	45	17.48	+17	32	01.9	898

* * * * *

ORBITAL ELEMENTS.

Orbital elements have been computed by the following contributors:

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H. Oishi, 5-3-14 Ikeda, Niiza, Saitama 352, Japan
T. Urata, 6-1, Muramatsuhara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan (U)
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.

Comet McKenzie-Russell (1989 XVIII)
T 1989 Nov. 7.69395 ET Marsden

q 1.9758171		(1950.0)	P	Q
	Peri.	191.75800	-0.20955697	+0.92759080
	Node	293.21502	+0.92214400	+0.29267443
e 1.0	Incl.	160.33376	+0.32517121	-0.23220031

From 28 observations 1989 Dec. 2-1990 Jan. 20.

Periodic Comet Mueller 3 (1990l)
Epoch 1990 Aug. 17.0 ET = JDE 2448120.5
T 1990 Aug. 1.76838 ET Nakano

q 2.9982212		(1950.0)	P	Q
n 0.11397497	Peri.	225.97361	+0.99173818	-0.06409922
a 4.2130479	Node	137.33564	+0.09330113	+0.95490069
e 0.2883487	Incl.	9.43678	-0.08803570	+0.28992405
P 8.65				

From 17 observations 1990 Sept. 17-Dec. 7, mean residual 1".00.

Periodic Comet Shoemaker-Levy 1 (1990o)
Epoch 1990 Sept. 26.0 ET = JDE 2448160.5
T 1990 Sept. 18.58125 ET Marsden

q 1.5240036		(1950.0)	P	Q
n 0.05705451	Peri.	310.60112	+0.94674627	+0.01096700
a 6.6825581	Node	51.35752	+0.19445120	+0.77710607
e 0.7719431	Incl.	24.33037	-0.25663249	+0.62927409
P 17.27				

From 34 observations 1990 Oct. 24-1991 Jan. 5, mean residual 1".1.

Periodic Comet Shoemaker-Levy 2 (1990p)
Epoch 1990 Sept. 26.0 ET = JDE 2448160.5
T 1990 Sept. 25.39473 ET Marsden

q 1.8440503		(1950.0)	P	Q
n 0.10625345	Peri.	140.14935	+0.96247765	-0.26309808
a 4.4147625	Node	235.22742	+0.22374490	+0.90799095
e 0.5822991	Incl.	4.64039	+0.15354151	+0.32608562
P 9.28				

From 19 observations 1990 Sept. 17-Dec. 18, mean residual 0".8.

Comet Tsuchiya-Kiuchi (1990i)
Epoch 1990 Sept. 26.0 ET = JDE 2448160.5
T 1990 Sept. 28.74177 ET Nakano

q 1.0924238		(1950.0)	P	Q
z +0.0042873	Peri.	180.92356	-0.85979407	+0.41675595
+/-0.0000274	Node	330.04294	+0.47218906	+0.86886212
e 0.9953165	Incl.	143.77803	+0.19440078	-0.26719488

From 54 observations 1990 July 17-Dec. 24, mean residual 1".11.

Periodic Comet Holt-Olmstead (1990k)
Epoch 1990 Sept. 26.0 ET = JDE 2448160.5
T 1990 Oct. 4.51951 ET Nakano

q 2.0433075		(1950.0)	P	Q
n 0.15989064	Peri.	2.58726	+0.95556136	-0.28756153
a 3.3619198	Node	14.63204	+0.26563023	+0.74445412
e 0.3922200	Incl.	14.88513	+0.12784001	+0.60257484
P 6.16				

From 37 observations 1990 Sept. 14-Dec. 6, mean residual 0".80.

Comet Levy (1990c)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
T 1990 Oct. 24.68340 ET Nakano

		(1950.0)	P	Q
q 0.9387044				
z -0.0004576	Peri.	242.65977	-0.04459501	-0.86831443
+/-0.0000344	Node	138.66302	-0.42010598	+0.46494815
e 1.0004295	Incl.	131.58759	-0.90637865	-0.17278100

From 352 observations 1990 May 21-Dec. 16, mean residual 0".80. Non-gravitational parameters A1 = +3.57 +/- 0.13, A2 = +0.4473 +/- 0.2021.

Periodic Comet Mueller 2 (1990j)
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
T 1990 Nov. 19.90131 ET Nakano

		(1950.0)	P	Q
q 2.0829510				
n 0.15020494	Peri.	171.06446	+0.87231326	-0.48299987
a 3.5049344	Node	218.12131	+0.44062359	+0.84394271
e 0.4057090	Incl.	7.07458	+0.21194441	+0.23339199
P 6.56				

From 35 observations 1990 Sept. 15-Dec. 6, mean residual 0".84.

Comet Arai (1991b)
T 1990 Dec. 11.07005 ET Nakano

		(1950.0)	P	Q
q 1.4359577				
	Peri.	337.76202	-0.27771871	-0.43080404
	Node	114.84101	+0.96030631	-0.14883078
e 1.0	Incl.	71.11940	+0.02615560	+0.89008835

From 19 observations 1990 Dec. 23-1991 Jan. 12.

Periodic Comet Metcalf-Brewington (1991a)
Epoch 1991 Jan. 24.0 ET = JDE 2448280.5
T 1991 Jan. 5.75307 ET Nakano

		(1950.0)	P	Q
q 1.5921416				
n 0.12707354	Peri.	208.14013	+0.81862066	-0.57366502
a 3.9183146	Node	187.06165	+0.56012085	+0.80810355
e 0.5936667	Incl.	13.03347	+0.12698366	+0.13370529
P 7.76				

From 68 observations 1906-1991, mean residual 1".45.

Periodic Comet Swift-Gehrels (1991c)
Epoch 1991 Mar. 5.0 ET = JDE 2448320.5
T 1991 Feb. 22.72484 ET Nakano

		(1950.0)	P	Q
q 1.3551336				
n 0.10700434	Peri.	84.84256	+0.77259245	-0.62418240
a 4.3940850	Node	313.71771	+0.49996359	+0.71090206
e 0.6916005	Incl.	9.25003	+0.39132764	+0.32405955
P 9.21				

From 64 observations 1889-1991, mean residual 1".69. Nongravitational parameters A1 = +0.56 +/- 0.02, A2 = +0.0212 +/- 0.0001, A3 = -0.0224 +/- 0.0022.

One-opposition minor planets

Planet	H	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1988 DO1	12.6	880320	301.71	119.63	120.16	6.13	0.1108	2.2605	29	8	D	N
1988 QF	15.0	880827	321.43	227.67	156.20	25.12	0.0987	2.0106	29	5		W
1990 EL7	13.2	900310	20.12	176.79	323.74	4.56	0.0452	2.1660	22	0		N
1990 QY	12.7	900906	46.48	81.17	197.09	8.08	0.2103	3.0250	56	0		E
1990 QA1	14.5	900906	32.94	60.59	238.04	3.16	0.1873	2.3118	55	0		E
1990 QG1	14.1	900906	6.60	351.58	343.74	6.63	0.1356	2.3628	31	0		E
1990 QN1	14.1	900906	59.83	315.19	317.79	4.52	0.1187	2.2728	29	8		E

1990	QO1	12.4	900906	112.08	251.84	337.19	10.23	0.0529	2.9986	29	0		E
1990	QT1	14.9	900817	4.51	196.56	132.88	3.01	0.2240	2.4407	6	0	D	a
1990	QE2	14.1	900906	46.25	310.70	334.76	5.01	0.1601	2.2289	28	0		E
1990	QM2	13.7	900906	353.57	193.26	161.14	22.78	0.0926	1.9370	32	0		E
1990	QN2	14.1	900906	19.73	335.71	345.97	7.11	0.1370	2.3581	29	0		E
1990	QR2	12.4	900906	51.04	322.44	334.85	4.45	0.0562	2.7635	27	9		E
1990	QS2	12.1	900906	117.92	92.09	142.55	2.62	0.0069	2.9049	25	6		E
1990	QD3	15.4	900906	1.36	6.11	337.19	6.21	0.1839	2.1602	52	0		E
1990	QH3	14.5	900906	5.08	355.32	341.25	17.21	0.2863	2.6905	52	0		E
1990	QX3	15.4	900906	1.33	3.67	337.68	5.46	0.2959	2.5626	29	0		E
1990	RD	13.4	900926	340.73	204.35	176.26	7.98	0.2175	2.8817	6	8		E
1990	RF	11.5	900817	330.07	201.14	174.01	16.91	0.0568	3.2203	35	7		M
1990	RP	14.7	900926	2.88	70.08	275.23	1.23	0.1793	2.5223	7	8		E
1990	RC2	12.8	900926	217.71	311.38	193.64	5.80	0.0929	2.7198	6	8		E
1990	RD2	15.4	900926	352.91	33.28	336.33	3.70	0.2025	2.2562	6	6		E
1990	RE2	13.3	900926	320.67	229.57	190.98	4.95	0.2479	2.7336	6	8		E
1990	RF2	14.9	900926	38.14	43.52	248.78	1.24	0.3000	2.3164	4	6	E	E
1990	RG2	12.8	900926	359.08	174.93	185.17	11.32	0.2210	3.1748	6	8		E
1990	RH2	14.6	900926	336.43	46.54	343.57	6.62	0.1151	2.3332	5	8		E
1990	RJ2	14.0	900926	313.54	260.17	174.87	6.30	0.2686	2.5811	4	5		E
1990	RK2	14.1	900926	283.53	266.14	176.84	3.02	0.0500	2.1886	4	5	E	E
1990	RL2	14.5	900926	27.37	129.93	173.81	10.86	0.2697	2.4497	5	6		E
1990	RM2	12.8	900926	53.28	305.66	335.50	16.05	0.2011	2.8169	4	6		E
1990	RN2	13.5	900926	192.41	193.04	330.69	9.25	0.0362	2.4482	4	6		E
1990	RO2	13.9	900926	89.08	291.50	314.53	4.62	0.1846	2.3021	5	8		E
1990	RP2	15.4	900926	5.10	109.74	242.98	2.73	0.1901	2.2686	5	8		E
1990	RQ2	14.4	900926	341.97	44.90	342.36	4.49	0.1727	2.1538	4	5		E
1990	RR2	13.6	900926	4.18	162.20	193.72	6.07	0.1500	2.4128	4	5	E	E
1990	RS2	14.0	900926	321.12	120.77	294.95	2.18	0.1691	2.3529	4	7		E
1990	RT2	13.8	900926	349.95	20.82	355.93	11.23	0.1780	2.6385	4	5		E
1990	RU2	14.6	900926	31.04	331.74	348.60	6.21	0.1583	2.3354	4	7		E
1990	RV2	12.5	900906	291.41	218.83	215.89	8.36	0.1063	2.6843	5	6		M
1990	RW2	15.5	900906	359.53	49.25	302.31	3.83	0.3020	2.5236	5	6		M
1990	RX2	14.0	900906	356.31	22.92	335.85	10.59	0.1917	2.6528	5	6		M
1990	RY2	12.5	900906	10.29	59.05	279.86	2.39	0.2827	3.9897	4	5	E	M
1990	RE5	12.0	900906	103.93	257.65	334.48	13.73	0.1948	3.0305	5	6		M
1990	SO1	11.7	900926	298.92	225.14	217.67	11.96	0.1500	2.9789	3	8	E	E
1990	SP1	13.9	900926	23.18	349.09	345.26	9.84	0.1345	2.5193	2	6		E
1990	SW1	14.3	900926	345.30	194.35	193.75	25.46	0.2957	2.3577	30	0		E
1990	SC4	13.6	900926	312.73	245.51	189.89	22.00	0.2827	2.3828	29	0		E
1990	SF4	13.2	900926	50.03	56.31	229.91	10.57	0.2210	2.5418	29	0		E
1990	SL9	12.5	900906	85.93	150.07	99.98	2.64	0.1751	3.1379	11	0		M
1990	SB10	13.7	900926	4.26	301.55	45.65	8.01	0.1893	2.7947	3	6		E
1990	SC10	12.9	900926	348.36	321.86	47.85	8.96	0.1668	2.9426	3	6		E
1990	SF10	14.6	900926	3.16	294.11	56.91	6.37	0.1853	2.3139	3	6		E
1990	SG10	14.9	900926	39.49	200.19	99.92	6.24	0.1853	2.1837	3	6		E
1990	SJ10	13.9	900926	48.31	183.86	100.78	7.93	0.2233	2.2556	3	6		E
1990	SL10	14.0	900926	36.41	290.09	19.48	14.42	0.1248	2.3546	3	6		E
1990	SS10	14.8	900926	5.89	14.94	337.65	10.37	0.1471	2.3460	4	6		E
1990	ST10	13.1	900926	319.22	73.23	343.74	14.02	0.1768	2.5959	4	6		E
1990	SW10	14.6	900926	4.91	145.64	207.58	8.69	0.2731	2.7904	4	8		E
1990	SX10	14.0	900926	17.14	32.95	310.39	5.82	0.0797	2.3168	26	0		M
1990	SY10	11.7	900926	152.77	357.55	204.84	17.42	0.1500	3.1373	3	6	E	E
1990	SA11	14.0	900906	344.82	122.78	256.54	4.87	0.2291	3.0435	3	6		M
1990	SB11	15.5	900906	9.41	49.49	288.28	4.36	0.2004	2.1678	3	8	E	M
1990	SC11	15.0	900906	42.15	69.10	220.44	5.69	0.2249	2.1975	3	6		M
1990	SD11	15.0	900906	28.18	328.90	339.98	13.34	0.2395	2.5585	3	6		M
1990	SE11	13.5	900926	37.07	1.17	312.12	8.31	0.1491	2.7812	25	8		M
1990	SF11	13.0	900906	203.37	196.20	310.50	2.02	0.0606	2.4624	5	6		M

1990	TQ	15.0	900906	349.21	17.80	356.40	6.89	0.2673	2.3016	54	0	M
1990	TZ	11.0	901105	307.74	226.59	239.94	22.02	0.2679	2.4239	67	0	B
1990	TB1	13.0	901016	68.48	300.81	359.49	7.81	0.1454	2.2831	41	9	N
1990	TM1	11.0	901016	68.77	235.65	85.91	6.65	0.0500	3.2491	29	0	M
1990	TO1	14.0	901105	358.23	155.64	230.28	19.78	0.0859	1.9522	62	0	W
1990	TR1	13.0	901016	62.85	126.80	183.49	6.31	0.1306	2.2845	35	6	W
1990	TH3	13.5	901016	19.76	301.62	55.45	10.59	0.2894	2.7601	9	0	M
1990	TJ3	13.5	901016	357.71	306.25	89.69	4.75	0.1288	2.2073	29	0	M
1990	TN3	14.0	901105	12.63	4.49	20.68	20.88	0.0936	1.9623	66	0	B
1990	TG5	14.5	900926	342.69	84.02	295.08	3.75	0.1852	2.2480	25	9	M
1990	TB6	14.5	900926	350.23	32.82	331.93	6.94	0.1182	2.3021	26	6	M
1990	TF6	14.5	900906	323.62	87.71	327.96	8.78	0.3398	2.7234	50	8	M
1990	TL6	14.5	900926	359.26	48.79	306.16	3.72	0.1744	2.1708	26	8	M
1990	TD7	17.0	901016	7.36	356.32	21.89	3.27	0.2452	2.3399	4	7	W
1990	TT7	16.0	901016	313.05	59.10	45.10	4.31	0.2337	2.5360	4	4	M
1990	TW7	15.0	901105	346.91	26.02	35.55	6.11	0.2249	2.3623	28	6	E
1990	TF8	13.0	901016	304.90	247.94	216.53	13.90	0.1400	2.5436	28	6	M
1990	TG8	13.2	901105	320.19	62.38	37.92	17.40	0.2219	3.0975	30	8	E
1990	TB9	16.0	900926	315.89	198.16	238.85	5.85	0.1831	2.5845	4	6	M
1990	TC9	15.5	900926	17.71	119.52	230.38	4.36	0.1431	2.2288	4	6	M
1990	TD9	14.0	900926	83.04	6.97	259.23	4.75	0.2563	2.9814	4	6	E M
1990	TE9	15.0	900926	51.98	342.66	325.57	4.39	0.1519	2.3086	4	6	M
1990	TF9	15.0	900926	52.49	86.31	222.50	9.46	0.1505	2.7396	4	6	M
1990	TG9	15.0	900926	215.22	294.00	234.57	6.33	0.1167	2.2995	4	6	M
1990	TH9	15.5	900926	344.09	188.53	210.03	19.00	0.1808	2.8473	4	5	M
1990	TJ9	14.5	900926	335.81	54.74	348.27	6.21	0.0290	2.7755	4	6	M
1990	TK9	17.0	900926	8.06	11.30	350.75	5.64	0.1812	2.3163	4	6	M
1990	TL9	16.0	900926	6.72	110.02	251.00	3.09	0.2878	2.7328	4	6	M
1990	TM9	13.5	900926	250.48	196.56	313.55	4.12	0.2221	3.1122	4	6	E M
1990	TN9	15.5	900926	335.59	199.32	212.13	10.92	0.2024	2.6232	4	6	M
1990	TO9	15.5	900926	335.41	131.09	275.92	3.27	0.1374	2.2930	4	6	M
1990	TP9	15.5	900926	314.06	158.22	279.73	3.95	0.1593	2.7643	4	6	M
1990	TQ9	17.0	900926	343.15	41.61	0.85	8.57	0.2364	2.6079	4	6	M
1990	TR9	14.0	900926	7.11	29.57	334.12	3.38	0.1846	2.3880	4	6	M
1990	TS9	14.0	900926	227.25	178.89	344.22	7.17	0.1507	2.7225	4	6	M
1990	TU9	13.0	900926	221.46	157.09	12.76	22.67	0.1705	3.1143	4	6	M
1990	TV9	17.5	900926	3.28	123.19	244.82	4.28	0.2382	2.4069	4	6	M
1990	TW9	15.0	900926	331.07	99.51	307.65	3.29	0.0376	2.2779	4	6	M
1990	TX9	14.5	900926	245.63	175.85	333.09	3.77	0.1712	2.6515	4	6	M
1990	TY9	16.0	900926	296.20	122.74	334.86	4.48	0.1595	2.2802	4	6	M
1990	TZ9	15.5	900926	47.22	88.88	215.96	12.49	0.2491	3.1585	4	6	E M
1990	TB10	16.5	900926	331.90	72.50	339.90	3.95	0.1394	2.3797	4	6	M
1990	TC10	17.0	900926	15.59	30.36	317.93	3.68	0.2566	2.6235	4	6	M
1990	TE10	15.5	900926	67.27	17.29	265.35	2.56	0.2327	2.3419	4	6	M
1990	TF10	14.0	900926	356.44	171.89	210.04	24.43	0.0885	3.0143	4	6	M
1990	TG10	13.5	900926	142.17	287.29	301.18	4.18	0.1558	2.8529	4	6	M
1990	TH10	14.5	900926	63.47	72.29	234.48	6.50	0.0822	3.0709	4	6	M
1990	TJ10	14.5	900926	1.28	20.30	357.63	8.61	0.0280	2.9558	4	6	M
1990	TK10	15.0	900926	14.23	126.30	227.28	4.70	0.2111	2.7036	4	6	M
1990	TL10	13.0	900926	233.81	302.23	208.83	23.04	0.0637	3.2045	4	6	E M
1990	TM10	16.0	900926	284.56	186.39	272.66	3.19	0.0540	2.4174	4	6	M
1990	TO10	15.5	900926	342.93	47.40	356.47	4.53	0.2391	2.7504	4	6	M
1990	TP10	15.0	900926	151.68	212.81	9.60	13.25	0.1042	2.4865	4	6	M
1990	TQ10	15.0	900926	338.36	91.78	314.35	4.03	0.1196	2.9591	4	6	M
1990	TR10	15.5	900926	74.92	39.58	247.36	4.70	0.1328	2.2130	4	6	M
1990	TS10	15.5	900926	23.36	32.17	316.75	2.09	0.0877	2.4477	4	6	M
1990	TT10	14.0	900926	170.81	207.74	359.67	5.73	0.0451	2.7158	4	6	M
1990	TU10	14.0	900926	26.22	102.50	233.60	6.26	0.2217	2.7571	4	6	M
1990	TV10	16.5	900926	321.84	82.49	353.98	4.35	0.2524	2.3890	4	6	M

1990	TW10	17.5	900926	320.60	80.19	348.35	4.93	0.1595	2.2024	4	6		M
1990	TX10	16.0	900926	182.42	326.18	229.35	5.66	0.0462	2.2643	4	6		M
1990	TZ10	14.0	900926	28.99	136.72	208.71	21.05	0.0623	2.7874	2	4		M
1990	TA11	17.0	900926	44.01	69.67	244.77	4.09	0.1820	2.1519	4	6		M
1990	TC11	16.0	900926	313.95	147.32	294.41	2.19	0.2193	2.2854	2	4		M
1990	TE11	16.0	900926	9.10	24.58	325.54	2.98	0.2908	2.5623	3	5		M
1990	TH12	13.5	901016	306.91	230.50	244.62	4.16	0.1456	2.3685	39	8		U
1990	TQ12	14.0	901016	343.79	175.00	255.29	4.68	0.2135	2.3613	41	0	D	M
1990	TB13	13.5	900926	102.16	128.82	134.62	11.21	0.0753	2.9667	3	5		M
1990	TC13	16.0	900926	13.26	252.17	93.64	8.32	0.2829	2.7480	3	5	E	M
1990	TD13	16.0	900926	0.06	269.98	100.48	7.88	0.2688	2.7448	3	5		M
1990	TE13	15.5	900926	352.88	304.35	79.02	9.23	0.2335	2.8318	3	5		M
1990	TF13	13.5	900926	267.74	37.93	84.32	10.01	0.1408	2.8278	3	5		M
1990	TG13	14.5	900926	304.00	31.53	62.51	12.18	0.2370	2.5001	3	5		M
1990	TH13	13.0	900926	312.60	356.28	79.25	11.31	0.1497	3.1102	3	5		M
1990	TJ13	14.5	900926	326.52	301.90	119.55	9.92	0.1879	2.8426	3	5		M
1990	TK13	14.0	900926	2.99	269.64	99.81	10.44	0.1440	3.0483	3	5		M
1990	TL13	16.0	900926	61.31	182.52	116.43	9.07	0.1211	2.2936	3	4		M
1990	TM13	15.5	900926	14.86	299.25	45.12	19.61	0.2723	2.8421	2	4	E	M
1990	TV13	13.2	901016	21.58	335.64	25.84	7.97	0.1576	2.3476	11	5		N
1990	UC1	14.5	901016	49.20	302.31	8.31	10.12	0.2151	2.3834	15	0		M
1990	UF1	13.5	901105	45.14	286.09	58.24	4.45	0.1505	2.2209	29	0		M
1990	UJ1	13.0	901016	334.53	197.07	225.72	13.16	0.1573	2.6819	24	0		M
1990	UP1	14.0	901016	349.74	354.22	55.43	8.84	0.1778	2.2702	35	0		M
1990	UR1	14.0	901105	10.00	147.78	233.79	20.40	0.1461	1.9047	21	6		M
1990	UU1	14.0	901016	24.10	173.72	191.86	13.60	0.1752	2.5556	28	9		M
1990	UX1	13.0	901016	14.49	191.21	190.40	12.73	0.1463	2.6523	26	6		M
1990	UY1	14.5	901016	5.68	283.98	106.67	9.00	0.1359	2.3561	28	9		M
1990	UB2	13.7	901105	62.61	221.09	90.90	5.56	0.2180	2.2198	37	0		N
1990	UC2	14.1	901105	18.88	277.49	81.73	9.28	0.1639	2.4531	29	9		N
1990	UF2	13.8	901105	229.23	338.30	205.44	7.21	0.1584	2.2627	19	7		N
1990	UM2	12.0	901016	47.76	275.37	62.62	11.25	0.1086	3.0157	28	0		M
1990	UN2	14.1	901125	69.14	277.46	53.55	6.07	0.0954	2.3294	28	0		N
1990	UO2	13.0	901016	352.39	162.25	236.45	23.86	0.2256	2.3711	24	5		W
1990	UQ2	13.3	901125	31.06	325.33	43.28	8.46	0.2240	2.3911	54	0		N
1990	UB3	14.1	901105	324.41	99.02	353.19	2.39	0.1651	2.2696	36	0		E
1990	UG3	13.4	901125	358.62	359.45	57.86	6.42	0.3137	2.5849	31	0		N
1990	UN3	16.5	901016	10.65	217.04	156.46	5.01	0.2668	2.3490	4	7		M
1990	UP3	14.0	901016	213.81	94.15	93.12	5.95	0.0761	2.2505	4	7		M
1990	US3	13.0	901016	281.54	47.51	84.01	8.61	0.1254	3.1113	4	7		M
1990	UY3	12.8	901016	23.89	291.79	68.11	9.91	0.2264	3.1170	28	5		N
1990	UH4	13.5	901016	358.39	343.29	56.35	17.30	0.2101	2.8222	29	7		M
1990	UJ4	13.6	901016	81.93	227.13	66.12	9.80	0.1608	2.5101	10	6		N
1990	UL4	14.2	901016	36.89	269.51	84.84	6.69	0.0223	2.2884	10	6		N
1990	US4	14.2	901016	66.33	224.27	77.83	6.69	0.2192	2.3607	10	6		N
1990	VE	13.0	901105	8.86	324.66	72.86	5.02	0.2354	2.5855	16	0		U
1990	VQ1	12.0	901105	99.05	56.32	222.33	12.15	0.1394	2.6392	30	0		W
1990	VT1	13.6	901105	10.95	193.86	199.18	1.85	0.2089	2.3184	27	6		N
1990	VU1	8.5	901125	65.77	264.59	70.21	23.06	0.1652	5.1895	37	0		B
1990	VX1	14.0	901125	31.69	124.60	248.93	1.55	0.2157	2.2020	26	0		U
1990	VY1	13.9	901125	19.29	179.51	209.23	11.31	0.2497	2.6615	12	0	D	N
1990	VB2	12.7	901125	56.82	99.27	224.21	17.97	0.2891	2.2772	8	6	E	N
1990	VD2	11.5	901105	283.01	305.96	199.06	0.97	0.1401	3.0722	11	0		W
1990	VG2	12.4	901105	15.19	262.41	127.52	3.23	0.1804	2.7610	30	6		N
1990	VL2	13.5	901105	342.25	304.59	130.53	3.39	0.1096	2.5178	11	0		M
1990	VM2	14.0	901105	17.36	282.98	103.32	4.57	0.2029	2.6685	10	0		M
1990	VS2	13.9	901125	54.59	214.08	135.92	5.75	0.1553	2.5731	6	0		N
1990	VW2	14.5	901105	31.39	148.87	212.42	2.76	0.1890	2.2880	10	0		W
1990	VX2	12.8	901125	343.59	41.76	52.72	24.40	0.2928	2.4420	32	0		N

1990 VZ2	11.3	901125	19.66	0.68	34.98	9.20	0.0433	3.0199	40	5		N
1990 VD3	14.0	901125	262.08	237.62	276.22	3.29	0.0578	2.3731	13	6		N
1990 VE3	14.8	901105	31.52	331.43	24.73	6.58	0.2153	2.2883	12	4		N
1990 VH3	14.5	901125	358.84	156.04	267.78	3.29	0.2690	2.5064	12	7		N
1990 VJ3	11.5	901125	347.60	168.80	264.44	8.68	0.0815	3.0088	25	8		U
1990 VE4	13.5	901125	354.98	16.02	53.03	12.57	0.2160	2.7486	33	0		U
1990 VZ4	13.4	901125	135.59	87.95	188.96	10.22	0.1217	2.9041	8	4		N
1990 VS6	12.6	901125	71.53	264.72	53.22	3.67	0.1670	3.0393	8	9		N
1990 VW6	14.5	901105	343.62	328.12	92.32	3.44	0.1364	2.1873	6	9		W
1990 VZ6	12.5	901105	335.44	74.00	23.81	8.50	0.1958	3.1291	34	9		N
1990 VB7	14.0	901105	293.34	189.37	328.58	0.57	0.2140	2.5085	8	6	E	B
1990 VH7	10.0	901105	46.20	85.61	277.46	12.05	0.0859	5.2384	22	5		M
1990 VD8	14.4	901105	15.38	84.76	289.99	3.44	0.2772	2.6850	13	6		N
1990 WD	13.0	901105	39.55	236.50	91.13	7.25	0.2049	2.3201	6	4		M
1990 WF	12.5	901125	25.14	255.28	130.31	4.53	0.1439	2.2543	38	8		W
1990 WM	12.5	901105	127.25	161.08	98.95	12.14	0.0789	2.9846	6	3		M
1990 WK2	12.0	901125	344.96	138.78	287.65	12.59	0.1829	2.7127	29	8		M
1990 WN2	12.6	901125	345.87	3.45	78.44	14.80	0.1346	2.6650	25	6		N
1990 WQ2	13.0	901125	355.91	217.48	214.79	6.56	0.1689	2.6787	26	9		M
1990 WR2	13.5	901125	359.22	335.59	93.52	9.02	0.2518	2.5426	35	0		W
1990 WZ2	13.5	901125	348.27	62.16	3.05	21.79	0.3390	2.2929	29	7		M
1990 WB3	12.2	901125	27.51	312.89	74.14	5.57	0.0925	2.7474	27	0		N
1990 WF3	14.4	901125	39.68	212.07	144.83	2.65	0.2447	2.3307	7	8		N
1990 WL3	13.0	901105	243.18	105.30	87.79	14.65	0.1336	2.5967	5	7		M
1990 WX3	13.5	901125	17.00	307.04	95.33	6.64	0.1693	2.2016	27	0		M
1990 WY3	12.5	901125	34.20	285.99	105.37	8.48	0.0610	2.3920	22	5		N
1990 WB4	12.2	901125	14.58	126.52	275.51	7.72	0.1537	3.0288	3	7	E	N
1990 XB	12.0	901215	344.85	33.21	67.23	8.57	0.1511	3.0498	8	0		N
1990 XM	13.3	901215	43.68	260.81	114.36	2.33	0.1650	2.1513	12	8		N
1990 XN	12.9	901215	338.85	16.56	85.92	6.38	0.1583	2.4668	26	8		N
1990 XP	13.0	901215	34.02	220.89	188.10	4.83	0.1367	2.2162	22	6		U
1990 XU	11.9	901215	69.03	260.57	131.05	11.12	0.0468	2.9169	11	6		N
1990 XZ	13.5	901125	44.57	321.81	52.60	23.35	0.0809	1.9333	30	6		G
1990 XD1	16.5	901215	358.75	352.17	75.35	31.74	0.2841	2.7762	14	0		M
1990 YB	12.6	901215	178.55	154.86	137.25	2.69	0.0426	2.7497	5	6	E	N
1990 YC	13.5	901215	27.30	338.89	81.96	2.83	0.1411	2.2117	19	8		N
1990 YE	13.5	901215	10.63	344.91	91.19	1.42	0.2693	3.0604	19	6		W
1990 YF	13.5	910104	18.04	160.62	270.91	8.89	0.2627	2.7625	19	0		U
1990 YH	11.2	910124	44.55	281.49	136.51	10.91	0.1398	3.1275	15	6	E	N
1990 YM	12.3	901215	339.00	38.17	103.22	24.34	0.2491	2.3894	22	0		N
1990 YP	14.5	901215	359.97	169.01	302.16	12.57	0.2521	2.5996	5	6		N
1990 YR	12.0	901215	37.79	13.07	28.90	7.32	0.1759	2.7788	14	7		W
1990 YY	11.0	901215	193.70	160.28	65.98	4.37	0.0263	5.1833	5	5	E	M
1990 YZ	16.0	901215	70.71	179.83	196.62	4.16	0.1087	2.2726	6	4		M

1988 DO1 = 1988 FM2 (H. Kaneda)
1990 QT1 = 1990 QG7 (A. Lowe)
1990 TQ12 = 1990 VW1 (S. Nakano, MPC 17406)
1990 VY1 = 1990 VW4 (S. Nakano)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Goffin
(123) Brunhild Obs. 149 M 254.22162 Peri. 123.77841
H 8.89 G 0.15 Opp. 44 n 0.22269705 Node 307.49499
rms res. 1".1 (M-N) 1872-1990 e 0.1203827 Incl. 6.41149

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Goffin
(158) Koronis Obs. 178 M 348.65764 Peri. 142.98984
H 9.27 G 0.15 Opp. 43 n 0.20285857 Node 278.10565
rms res. 1".0 (M-N) 1876-1989 e 0.0516301 Incl. 0.99975

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(289) Nenetta Obs. 91 M 84.12401 Peri. 188.36804
H 9.51 G 0.15 Opp. 26 n 0.20215639 Node 181.73221
rms res. 0".85 (M-P) 1906-1990 e 0.2029916 Incl. 6.68604

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(478) Tergeste Obs. 77 M 337.32260 Peri. 244.63775
H 7.98 G 0.15 Opp. 23 n 0.18823754 Node 233.54269
rms res. 0".85 (M-P) 1903-1990 e 0.0851510 Incl. 13.16478

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(507) Laodica Obs. 60 M 56.99718 Peri. 91.92554
H 9.1 G 0.15 Opp. 27 n 0.17568386 Node 293.85308
rms res. 0".97 (M-P) 1906-1990 e 0.0891475 Incl. 9.53025

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(529) Preziosa Obs. 31 M 46.51768 Peri. 333.40754
H 10.06 G 0.15 Opp. 19 n 0.18793570 Node 65.00115
rms res. 1".14 (M-P) 1902-1986 e 0.0883929 Incl. 11.00561

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(597) Bandusia Obs. 35 M 107.69798 Peri. 306.59441
H 9.4 G 0.15 Opp. 19 n 0.22567309 Node 36.20252
rms res. 0".90 (M-P) 1929-1990 e 0.1438969 Incl. 12.80678

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(738) Alagasta Obs. 80 M 262.69405 Peri. 47.14998
H 10.13 G 0.15 Opp. 29 n 0.18667016 Node 131.88565
rms res. 0".91 (M-P) 1913-1990 e 0.0631278 Incl. 3.53325

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(823) Sisigambis Obs. 54 M 17.53319 Peri. 218.34857
H 11.2 G 0.15 Opp. 17 n 0.29762681 Node 254.57778
rms res. 0".94 (M-P) 1916-1990 e 0.0902539 Incl. 3.64606

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(828) Lindemannia Obs. 103 M 139.39023 Peri. 290.03930
H 10.33 G 0.15 Opp. 21 n 0.17327619 Node 1.70306
rms res. 0".99 (M-P) 1905-1990 e 0.0446060 Incl. 1.14258

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(1183) Jutta Obs. 46 M 245.01498 Peri. 205.89181
H 12.1 G 0.15 Opp. 18 n 0.26791722 Node 14.77203
rms res. 1".01 (M-P) 1930-1990 e 0.1305651 Incl. 2.79686

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(1280) Baillauda Obs. 70 M 42.24903 Peri. 89.01851
H 10.33 G 0.15 Opp. 13 n 0.15663866 Node 293.30475
rms res. 0".90 (M-P) 1933-1990 e 0.0685061 Incl. 6.42587

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(1650) Heckmann Obs. 70 M 198.79195 Peri. 57.40782
H 11.56 G 0.15 Opp. 21 n 0.25943375 Node 199.38419
rms res. 1".04 (M-P) 1906-1990 e 0.1640890 Incl. 2.74334

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(1871) Astyanax Obs. 20 M 129.19163 Peri. 161.68020
H 11.0 G 0.15 Opp. 6 n 0.08015863 Node 145.09580
rms res. 0".79 (M-P) 1971-1990 e 0.0330078 Incl. 8.57161

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2001) Einstein Obs. 59 M 304.72256 Peri. 217.42523
H 12.85 G 0.15 Opp. 8 n 0.36654135 Node 356.53389
rms res. 0".91 (M-P) 1973-1990 e 0.0985333 Incl. 22.68039

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2082) Galahad Obs. 24 M 201.39792 Peri. 143.70105
H 13.1 G 0.15 Opp. 6 n 0.19757714 Node 89.93992
rms res. 0".73 (M-P) 1960-1990 e 0.1656038 Incl. 3.06969

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2161) Grissom Obs. 27 M 81.19896 Peri. 247.94771
H 12.4 G 0.15 Opp. 7 n 0.21624825 Node 126.22575
rms res. 0".90 (M-P) 1931-1990 e 0.1600454 Incl. 7.31105

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2163) Korczak Obs. 23 M 218.85315 Peri. 267.60612
H 11.7 G 0.15 Opp. 8 n 0.17720068 Node 112.85666
rms res. 0".84 (M-P) 1949-1986 e 0.1906625 Incl. 2.51343

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2170) Byelorussia Obs. 19 M 140.18096 Peri. 116.41642
H 13.9 G 0.15 Opp. 7 n 0.26410374 Node 255.41205
rms res. 0".91 (M-P) 1949-1990 e 0.1811022 Incl. 2.08112

Epoch 1991 Dec.10.0 ET = JDE 2448600.5 Bowell
(2171) Kiev Obs. 18 M 184.61206 Peri. 179.59688
H 13.6 G 0.15 Opp. 6 n 0.29102160 Node 101.63651
rms res. 0".84 (M-P) 1949-1990 e 0.1669285 Incl. 7.52049

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2192) Pyatigoriya Obs. 26 M 88.88448 Peri. 135.45643
H 11.3 G 0.15 Opp. 6 n 0.17752495 Node 201.39021
rms res. 0".82 (M-P) 1972-1990 e 0.0846058 Incl. 9.74905

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2289) McMillan Obs. 20 M 220.65919 Peri. 40.17626
H 13.6 G 0.15 Opp. 6 n 0.23055552 Node 189.41387
rms res. 0".92 (M-P) 1933-1990 e 0.1441388 Incl. 2.15342

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2373) 1929 PC Obs. 15 M 90.47971 Peri. 213.91537
H 12.5 G 0.15 Opp. 4 n 0.21086256 Node 146.16745
rms res. 0".62 (M-P) 1929-1990 e 0.1714441 Incl. 10.10801

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2421) Nininger Obs. 32 M 87.21020 Peri. 264.64480
H 10.8 G 0.15 Opp. 8 n 0.16967540 Node 77.47211
rms res. 1".07 (M-P) 1962-1990 e 0.0565616 Incl. 10.15241

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2628) Kopal Obs. 23 M 138.31190 Peri. 146.94228
H 12.7 G 0.15 Opp. 9 n 0.19823952 Node 206.37763
rms res. 0".97 (M-P) 1974-1990 e 0.1477909 Incl. 1.32470

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2647) 1980 SP Obs. 37 M 81.91181 Peri. 122.12297
H 12.5 G 0.15 Opp. 9 n 0.29309236 Node 290.18269
rms res. 0".94 (M-P) 1950-1990 e 0.1371583 Incl. 3.93444

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2671) Abkhazia Obs. 16 M 110.47736 Peri. 156.17893
H 13.4 G 0.15 Opp. 4 n 0.23364721 Node 227.80225
rms res. 0".57 (M-P) 1973-1990 e 0.1185263 Incl. 1.46808

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2675) Tolkien Obs. 42 M 162.29467 Peri. 1.63670
H 12.5 G 0.15 Opp. 12 n 0.29930364 Node 5.46989
rms res. 0".89 (M-P) 1937-1990 e 0.1015654 Incl. 2.75166

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2703) Rodari Obs. 22 M 310.77869 Peri. 170.40383
H 13.5 G 0.15 Opp. 4 n 0.30330428 Node 48.98425
rms res. 0".83 (M-P) 1976-1990 e 0.0571687 Incl. 6.03423

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2730) Barks Obs. 49 M 167.34594 Peri. 271.12396
H 11.6 G 0.15 Opp. 9 n 0.21980880 Node 4.53649
rms res. 0".94 (M-P) 1963-1990 e 0.1311257 Incl. 6.44102

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2778) 1979 XP Obs. 22 M 224.85313 Peri. 285.96010
H 13.0 G 0.15 Opp. 7 n 0.28614139 Node 91.51132
rms res. 0".94 (M-P) 1948-1989 e 0.1220428 Incl. 4.61551

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2929) Harris Obs. 31 M 257.35330 Peri. 32.23391
H 11.6 G 0.15 Opp. 8 n 0.17886002 Node 142.35203
rms res. 1".07 (M-P) 1938-1990 e 0.0686558 Incl. 14.90370

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2942) 1932 BG Obs. 22 M 199.03067 Peri. 154.34494
H 13.2 G 0.15 Opp. 7 n 0.29433958 Node 115.94817
rms res. 1".00 (M-P) 1932-1990 e 0.1543428 Incl. 6.82137

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2947) 1955 QP1 Obs. 14 M 35.64047 Peri. 166.08343
H 13.0 G 0.15 Opp. 6 n 0.28102184 Node 283.53860
rms res. 0".60 (M-P) 1943-1990 e 0.1244335 Incl. 3.13239

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(2955) Newburn Obs. 20 M 268.99383 Peri. 233.75982
H 13.5 G 0.15 Opp. 6 n 0.30604317 Node 32.01604
rms res. 1".01 (M-P) 1979-1990 e 0.1154759 Incl. 3.59532

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3000) Leonardo Obs. 40 M 145.02301 Peri. 173.25281
H 13.0 G 0.15 Opp. 8 n 0.27319979 Node 200.51464
rms res. 0".93 (M-P) 1961-1990 e 0.1809964 Incl. 2.75184

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3004) 1976 DD Obs. 25 M 283.31936 Peri. 212.03095
H 14.3 G 0.15 Opp. 4 n 0.23695412 Node 322.11982
rms res. 0".67 (M-P) 1976-1990 e 0.2677412 Incl. 30.24780

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3041) Webb Obs. 20 M 51.59040 Peri. 351.69545
H 12.5 G 0.15 Opp. 4 n 0.23687197 Node 82.11834
rms res. 0".80 (M-P) 1980-1990 e 0.1461177 Incl. 14.61301

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3043) San Diego Obs. 40 M 142.98757 Peri. 31.53426
H 13.6 G 0.15 Opp. 5 n 0.36850706 Node 350.55197
rms res. 0".79 (M-P) 1974-1990 e 0.1063046 Incl. 21.78701

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3097) Tacitus Obs. 27 M 157.47296 Peri. 85.31474
H 12.1 G 0.15 Opp. 6 n 0.19668328 Node 196.60678
rms res. 0".85 (M-P) 1960-1990 e 0.0890868 Incl. 7.45343

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3127) Bagration Obs. 13 M 167.09344 Peri. 29.46641
H 12.2 G 0.15 Opp. 6 n 0.23519161 Node 293.50136
rms res. 0".79 (M-P) 1973-1990 e 0.2009580 Incl. 4.83662

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3143) Genecampbell Obs. 26 M 99.07611 Peri. 327.87202
H 12.6 G 0.15 Opp. 6 n 0.20493876 Node 79.75976
rms res. 0".78 (M-P) 1980-1990 e 0.0826777 Incl. 3.09523

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3171) 1979 WO Obs. 22 M 28.36780 Peri. 20.35709
H 10.8 G 0.15 Opp. 8 n 0.17277253 Node 31.59614
rms res. 0".97 (M-P) 1962-1990 e 0.1280027 Incl. 11.37701

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3212) 1938 DH2 Obs. 15 M 326.90546 Peri. 34.74079
H 13.9 G 0.15 Opp. 4 n 0.29079169 Node 109.53832
rms res. 0".92 (M-P) 1938-1990 e 0.1515218 Incl. 7.81526

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3219) Komaki Obs. 16 M 256.16518 Peri. 289.73522
H 11.7 G 0.15 Opp. 6 n 0.18647677 Node 289.61748
rms res. 0".88 (M-P) 1934-1990 e 0.1318565 Incl. 6.79999

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3263) 1932 CN Obs. 30 M 31.49846 Peri. 9.41194
H 13.0 G 0.15 Opp. 7 n 0.26267373 Node 78.07278
rms res. 0".79 (M-P) 1932-1990 e 0.0681695 Incl. 7.74933

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3298) 1979 OB15 Obs. 17 M 135.45245 Peri. 50.55694
H 13.4 G 0.15 Opp. 6 n 0.27290366 Node 284.77151
rms res. 0".75 (M-P) 1950-1990 e 0.1918609 Incl. 2.57084

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3395) 1985 UN Obs. 19 M 36.08238 Peri. 107.17156
H 11.7 G 0.15 Opp. 9 n 0.21111020 Node 4.64746
rms res. 1".04 (M-P) 1938-1990 e 0.0577119 Incl. 4.03784

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3438) 1974 SD5 Obs. 30 M 88.71333 Peri. 346.43992
H 11.5 G 0.15 Opp. 5 n 0.18494911 Node 2.45473
rms res. 0".74 (M-P) 1942-1990 e 0.1977285 Incl. 15.27171

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
(3443) 1979 SB1 Obs. 16 M 147.98673 Peri. 111.39642
H 13.3 G 0.15 Opp. 6 n 0.26672737 Node 184.41490
rms res. 1".02 (M-P) 1938-1990 e 0.3098753 Incl. 12.66934

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Bowell	
(3536) 1981 EV20	Obs. 32	M	72.83390	Peri.	114.32073
H 13.8 G 0.15	Opp. 6	n	0.27474692	Node	340.66079
rms res. 0".83 (M-P)	1977-1990	e	0.0494306	Incl.	6.54567
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Bowell	
(3579) 1977 YA	Obs. 38	M	17.93377	Peri.	109.07671
H 14.7 G 0.15	Opp. 4	n	0.21832692	Node	14.07343
rms res. 0".70 (M-P)	1977-1990	e	0.3586179	Incl.	31.07798
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Bowell	
(3751) Kiang	Obs. 18	M	201.69930	Peri.	12.25166
H 11.8 G 0.15	Opp. 5	n	0.17697728	Node	271.39563
rms res. 1".12 (M-P)	1954-1990	e	0.1073480	Incl.	13.29464
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Bowell	
(3818) 1979 QL8	Obs. 15	M	160.27196	Peri.	62.55004
H 14.3 G 0.15	Opp. 5	n	0.27046284	Node	243.78469
rms res. 0".87 (M-P)	1968-1990	e	0.1796384	Incl.	2.04300
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Bowell	
(3834) 1980 JE	Obs. 18	M	297.54852	Peri.	170.85141
H 13.3 G 0.15	Opp. 4	n	0.24127852	Node	55.16931
rms res. 0".77 (M-P)	1980-1990	e	0.1896695	Incl.	14.03543
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Bowell	
(3904) Honda	Obs. 30	M	40.93662	Peri.	126.73711
H 11.1 G 0.15	Opp. 6	n	0.24116569	Node	311.96535
rms res. 0".93 (M-P)	1939-1990	e	0.0985181	Incl.	15.03284
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Bowell	
(4019) 1981 EK14	Obs. 24	M	122.08210	Peri.	145.45902
H 15.2 G 0.15	Opp. 5	n	0.27567311	Node	262.06936
rms res. 1".00 (M-P)	1979-1990	e	0.1282530	Incl.	2.48016
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Bowell	
(4134) Schutz	Obs. 26	M	229.70744	Peri.	77.74651
H 13.7 G 0.15	Opp. 4	n	0.28236689	Node	134.67856
rms res. 0".64 (M-P)	1961-1990	e	0.0979431	Incl.	4.18286
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Bowell	
(4192) 1981 DH	Obs. 24	M	151.73374	Peri.	113.11243
H 11.5 G 0.15	Opp. 6	n	0.17205333	Node	213.37315
rms res. 0".65 (M-P)	1954-1990	e	0.1730380	Incl.	0.50270
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Bowell	
(4250) Perun	Obs. 22	M	169.90032	Peri.	253.73496
H 11.9 G 0.15	Opp. 7	n	0.17509540	Node	59.83822
rms res. 1".01 (M-P)	1950-1990	e	0.1172753	Incl.	2.53502
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Bowell	
(4256) 1986 TX	Obs. 22	M	232.01150	Peri.	226.19603
H 13.5 G 0.15	Opp. 5	n	0.27325716	Node	72.06357
rms res. 1".03 (M-P)	1985-1990	e	0.0692299	Incl.	3.04590
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Bowell	
(4266) 1940 YE	Obs. 20	M	315.29414	Peri.	158.31397
H 11.9 G 0.15	Opp. 6	n	0.17398995	Node	322.17759
rms res. 0".76 (M-P)	1940-1990	e	0.1681096	Incl.	16.49800

(4680)* 1937 QC = 1937 TV = 1976 YM6 = 1983 VX1
Discovered 1937 Aug. 31 by H.-U. Sandig at Bergedorf.
Id. S. Nakano (MPC 13049)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5			Nakano	
M 105.87342		(1950.0)	P	Q
n 0.28073052	Peri.	115.48346	+0.53423038	-0.84258352
a 2.3099875	Node	302.05650	+0.74377534	+0.50685313
e 0.1709713	Incl.	4.61540	+0.40174140	+0.18207945
P 3.51	H 14.2		G 0.15	

Residuals in seconds of arc

370831	029	0.8-	0.6-	761220	095	2.5+	1.4-	901017	801	1.2+	0.8+
370901	029	0.6+	0.5+	831108	046	1.1+	0.5+	901017	801	1.1+	0.8+
370907	029	(3.3+	0.0)	831109	046	2.8+	1.5-	901022	801	0.7+	0.9+
370907	029	0.2-	0.3+	831109	046	1.2-	1.6-	901022	801	0.8+	1.4+
370908	029	2.3+	0.6-	831109	046	1.7-	1.8-	901214	801	1.0-	0.8+
370910	029	(28.9+	9.8+)	831110	046	0.2-	1.2-	901214	801	1.0-	0.8+
371007	029	2.1-	0.0	831110	046	2.7-	0.4-	901215	801	1.2-	1.0+
371007	029	(2.1-	16.5-)	831111	675	(4.0+	0.8+)	901215	801	1.2-	1.0+

(4681)* 1969 TC2 = 1977 DA11 = 1979 SV1
Discovered 1969 Oct. 8 by L. I. Chernykh at the Crimean Astrophysical Observatory.
Id. H. Oishi (JAM 2056), L. D. Schmadel (MPC 11746)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5			Oishi	
M 105.90053		(1950.0)	P	Q
n 0.18774178	Peri.	316.73972	+0.98693932	+0.10515462
a 3.0206154	Node	37.73962	-0.02391175	+0.84480000
e 0.1197067	Incl.	11.50097	-0.15930793	+0.52464794
P 5.25	H 11.8		G 0.15	

Residuals in seconds of arc

691008	095	1.0+	1.0-	790922	095	0.8-	0.9-	901015	801	0.0	0.2+
691013	095	0.6+	1.2+	880410	399	0.3+	0.4-	901015	801	0.1-	0.3+
691016	095	1.6+	0.4+	880410	399	(3.1+	3.4-)	901017	801	0.0	0.0
691104	095	0.6-	1.0-	880410	399	(3.2+	2.8-)	901017	801	0.0	0.1+
691111	095	2.0-	0.9+	880411	399	(0.2-	2.5-)	901018	364	0.6+	0.7+
691113	095	1.0+	1.0-	880411	399	(1.4+	3.3-)	901018	364	0.7-	0.5-
770219	033	0.8-	0.0	880411	399	(2.7+	4.3-)	901120	801	0.3-	0.1-
770219	033	1.3-	0.4+	880418	801	1.4+	0.6-	901120	801	0.2-	0.0

(4682)* 1973 SO4 = 1973 UG4 = 1932 WK = 1987 YG
Discovered 1973 Sept. 27 by L. I. Chernykh at the Crimean Astrophysical Observatory.
Id. B. G. Marsden (d, MPC 9064), T. Kobayashi (MPC 13474)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5			Bowell	
M 94.61610		(1950.0)	P	Q
n 0.28792983	Peri.	88.41865	+0.64985817	-0.75889501
a 2.2713198	Node	320.94483	+0.66811713	+0.59671282
e 0.1954513	Incl.	3.82076	+0.36235875	+0.26079143
P 3.42	H 14.0		G 0.15	

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

321122	754	0.3+	0.0	880111	033	0.8-	0.2+	900921	801	0.4+	0.1+
321124	754	(0.03-	0.04-)	880111	033	1.2-	0.0	901015	801	0.4+	0.1+
730927	095	2.1-	0.5+	900916	675	0.2+	0.8-	901015	801	0.4+	0.1+
730928	095	1.3-	2.8+	900916	675	0.2+	1.0-	901016	801	0.5+	0.0
731029	095	0.8+	0.3+	900919	675	0.2-	0.5-	901016	801	0.1+	0.2-
871222	385	1.5+	1.7- Y	900919	675	0.3+	1.2-				
871222	385	(3.2-	3.1-)Y	900921	801	0.4+	0.1+				

(4683)* 1976 GJ1 = 1935 UW = 1954 GB = 1959 CA1 = 1979 SE7 = 1979 TC1
= 1981 AZ1 = 1987 FY1 = 1990 UX2

Discovered 1976 Apr. 1 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. S. Nakano (MPC 12199), N. S. Chernykh (d), C. M. Bardwell

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell

M	359.65430	(1950.0)	P	Q
n	0.17913033	Peri. 300.85974	-0.25363666	-0.96728130
a	3.1166638	Node 163.82985	+0.89456721	-0.23689877
e	0.1551277	Incl. 1.22301	+0.36799178	-0.09080671
P	5.50	H 11.9	G 0.15	

Residuals in seconds of arc

351016	078	(19.6+	5.8+)	760406	808	0.4+	0.3+	870326	220	0.8-	1.3+
540402	760	0.9+	2.7-	760406	808	0.4-	1.0+	870326	220	(8.8-	7.9+)
540402	760	2.3-	0.9+	790923	095	2.7+	0.7-	901017	801	0.6-	0.3+
590201	690	(5.6+	0.6+)Y	791014	095	1.7+	0.9-	901017	801	0.6-	0.2+
590202	690	(16.9+	0.6+)Y	810108	381	0.4+	1.2+	901020	801	0.9-	0.1+
760401	095	(5.4+	4.1-)	810108	381	1.4-	0.7-	901020	801	0.5-	0.1+
760402	095	(1.2+	3.6-)	870322	220	0.9+	1.8-	901021	801	0.4-	0.2-
760404	808	1.3+	0.0	870323	220	(7.2+	8.7-)	901021	801	0.2-	0.2-
760404	808	1.0-	0.7+	870323	220	0.0	1.7-	901119	801	0.0	0.5-
760404	095	(5.2+	3.9-)	870324	220	1.2+	0.2+	901119	801	0.3-	0.3+

(4684)* 1978 GJ = 1978 JK3 = 1978 JN3 = 1982 MC = 1986 PE4 = 1986 QF

Discovered 1978 Apr. 10 by H. Debehogne at the European Southern Observatory.

Id. H. Oishi (MPC 13599), A. Mrkos (d)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Oishi

M	198.22221	(1950.0)	P	Q
n	0.26552857	Peri. 50.10147	-0.00066348	+0.99825268
a	2.3973340	Node 219.98018	-0.94322106	-0.02025099
e	0.1116747	Incl. 5.27633	-0.33216500	+0.05551110
P	3.71	H 13.4	G 0.15	

Residuals in seconds of arc

780410	809	0.2-	0.3-	820624	046	1.8+	0.8-	900919	675	0.2-	0.5-
780410	809	0.7-	0.1-	820624	046	(3.8-	1.6-)	900920	675	0.8-	0.8-
780410	809	0.2-	0.6-	860806	046	0.6-	1.2+	900920	675	0.9-	1.2-
780506	808	(2.4+	1.2+)	860806	046	0.6-	1.7+	901015	801	0.7+	0.3+
780506	808	0.4+	0.9+	860826	046	(6.4+	2.1-)	901015	801	0.9+	0.3+
780509	675	0.3+	1.1-	860826	046	(5.1+	0.4-)	901016	801	0.5+	0.5+
780510	675	0.1-	0.5-	900918	675	0.8+	0.6-	901016	801	0.3+	0.4+
820620	046	1.4-	0.3-	900918	675	1.6+	1.2-				
820620	046	0.1-	0.1+	900919	675	1.4-	0.9-				

(4685)* 1978 SP6 = 1978 TX2 = 1986 ES5

Discovered 1978 Sept. 27 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. N. S. Chernykh (d, MPC 10610), S. Nakano (ibid, MPC 12131)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	84.25404	(1950.0)	P	Q
n	0.17372803	Peri. 19.64252	+0.38694483	-0.92186584
a	3.1809446	Node 47.59913	+0.84213962	+0.34406366
e	0.1725794	Incl. 1.62233	+0.37559893	+0.17827947
P	5.67	H 12.2	G 0.15	

Residuals in seconds of arc

780927	095	2.1-	1.2-		860318	809	0.1-	0.9-		901114	801	0.0	0.3+
781003	095	1.0+	0.7+		890909	095	2.4-	0.6+		901116	801	0.1-	0.2+
781007	095	0.8+	1.1+		890909	095	0.8+	0.2-		901116	801	0.2-	0.3+
860309	809	1.7-	0.0		890928	809	0.0	0.7-		901213	801	0.1-	0.5+
860309	809	0.9-	0.3-		890928	809	0.6+	0.6-		901213	801	0.0	0.3+
860314	809	0.2-	1.0-		890928	809	1.1+	0.8-		901214	801	0.4+	0.1+
860314	809	0.1+	0.9+		890929	809	0.3+	0.6-		901214	801	0.0	0.5+
860315	809	0.0	0.0		890929	809	0.5+	0.7-		901219	403	(3.9+	0.7-)Y
860315	809	0.1-	0.2-		890929	809	0.8+	0.6-		901219	403	0.1+	2.0- Y
860318	809	1.5+	1.7-		901114	801	0.1-	0.2+					

(4686)* 1979 SX2 = 1988 AG5

Discovered 1979 Sept. 22 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. C. M. Bardwell (MPC 13464)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell

M	139.55021	(1950.0)	P	Q	
n	0.27071784	Peri.	114.95594	+0.98704037	+0.14667681
a	2.3665997	Node	236.67172	-0.16029818	+0.92009176
e	0.1576194	Incl.	4.46826	+0.00746993	+0.36320388
P	3.64	H	13.0	G 0.15	

Residuals in seconds of arc

790918	675	0.7-	0.3-		880117	809	0.1+	0.3-		880128	809	0.2+	0.1-
790919	675	0.9-	0.3-		880117	809	0.1+	0.3-		880128	809	0.1+	0.1+
790922	095	0.4+	0.8-		880119	809	0.4-	0.3+		880129	809	0.3+	0.5-
790928	095	1.5+	1.2-		880119	809	0.7-	0.2+		880130	809	0.4+	0.3-
791110	095	0.3-	2.3+		880119	809	0.6-	0.2+		901015	801	0.1+	0.3+
791111	095	(3.9-	2.7+)		880121	809	0.9-	0.5+		901015	801	0.0	0.4+
860809	095	0.6-	2.2+		880121	809	0.8-	0.5+		901016	801	0.1-	0.6+
880114	809	0.1+	0.3+		880123	809	0.0	0.6+		901016	801	0.1-	0.6+
880114	809	0.4+	0.5+		880123	809	0.1+	0.4+		901024	046	0.1+	1.8-
880114	809	0.7+	0.7+		880125	809	0.9-	0.4+		901024	046	0.0	1.1-
880115	809	0.5+	0.3-		880125	809	0.3-	0.3+		901119	801	0.0	0.5+
880115	809	0.7+	0.3-		880126	809	0.1+	0.3-		901119	801	0.0	0.5+
880115	809	1.0+	0.4-		880126	809	0.5+	0.0					
880117	809	0.0	0.4-		880127	809	0.0	0.0					

(4687)* 1979 SJ11 = 1951 RF

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

Id. C. M. Bardwell (MPC 10627)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell

M	30.50127	(1950.0)	P	Q	
n	0.17932951	Peri.	177.76154	+0.08001259	-0.99449797
a	3.1143556	Node	267.64402	+0.91344064	+0.10030712
e	0.1432541	Incl.	3.88029	+0.39902906	-0.03020392
P	5.50	H	12.2	G 0.15	

Residuals in seconds of arc

510904	024	1.6+	2.4-		791018	675	0.4-	0.9-		901024	046	1.0+	1.5-
510906	024	0.2-	1.8-		791018	675	0.9+	0.6+		901115	400	0.4-	0.8+
780709	675	1.0-	1.2+		791122	095	0.5+	1.6+		901115	400	0.1+	2.6+
780709	675	0.1+	2.2+		901016	801	0.9-	0.3+		901120	801	1.0-	0.1+
790924	095	2.1-	1.1+		901016	801	1.0-	0.4+		901120	801	1.1-	0.7-
791014	095	0.5+	0.6+		901024	046	1.8+	1.4-					

(4688)* 1980 WF

Discovered 1980 Nov. 29 by C. T. Kowal at Palomar.

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Marsden

M	102.41699	(1950.0)	P	Q
n	0.29540482	Peri. 212.85540	-0.06527271	-0.99306859
a	2.2328403	Node 241.05771	+0.93790142	-0.02761010
e	0.5147406	Incl. 6.41308	+0.34070573	-0.11424735
P	3.34	H 18.6	G 0.15	

Residuals in seconds of arc

801129	675	(1.7-	3.4+)	810103	474	0.6-	1.5-	901117	675	0.1+	0.9-
801129	675	1.7-	1.2+	810103	474	(3.0-	4.6-)	901117	675	1.1-	0.8-
801201	675	2.3+	0.3-	810109	801	1.6+	1.0-	901226	413	0.9-	0.2-
801201	675	0.9+	0.5+	810204	801	(1.2+	3.4+)	901226	413	0.2-	0.4-
801203	675	1.1+	0.3-	810208	474	(2.7+	2.9+)	901227	413	0.6+	0.4-
801212	688	(1.4+	3.1-)	810208	474	1.0-	0.0	901227	413	0.8+	0.1-
801214	675	1.3+	0.3-	810210	801	(1.3-	4.9+)	910106	413	0.7+	0.3+
801214	675	1.8-	2.7+	810228	801	(6.6+	2.6+)	910107	413	0.2+	0.2+
801228	474	(4.7-	1.3+)	901113	675	(0.3-	3.4-)				
801228	474	2.2-	1.0+	901113	675	0.6-	1.2-				

(4689)* 1980 YB = 1964 CC = 1978 GN2 = 1988 AR1

Discovered 1980 Dec. 30 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. S. Nakano (MPC 14782)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	26.67322	(1950.0)	P	Q
n	0.28488616	Peri. 31.45650	-0.72619785	-0.68198675
a	2.2874686	Node 105.28246	+0.61057351	-0.69781040
e	0.0720755	Incl. 5.16137	+0.31596941	-0.21898564
P	3.46	H 13.6	G 0.15	

Residuals in seconds of arc

640215	760	0.5+	1.2-	810109	688	1.0-	0.7-	901016	809	0.3+	0.3+
640215	760	0.4+	2.2+	810109	688	0.9-	0.7-	901016	809	0.4+	1.1+
640306	760	(4.7+	0.5+)	880113	046	0.2+	0.1-	901016	809	1.0+	0.2+
640306	760	2.6+	1.9+	880113	046	0.1+	0.1+	901019	809	0.5+	1.8+
780411	095	1.6-	1.9+	880114	046	0.3+	2.4-	901020	809	2.1-	0.1-
801210	095	(1.2-	3.5-)	880114	046	0.5+	0.5+	901020	809	1.3-	0.0
801230	688	1.7-	0.0	880115	046	(3.1+	0.2-)	901115	801	0.4-	0.1-
801230	688	0.8-	0.2-	880115	046	2.5+	0.5-	901115	801	0.4-	0.0
810109	688	0.7-	0.5-	901016	809	1.5+	1.3+				

(4690)* 1983 AJ = 1987 SJ7

Discovered 1983 Jan. 9 by B. A. Skiff at the Anderson Mesa Station of the Lowell Observatory.

Id. C. M. Bardwell (MPC 12570)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell

M	167.06210	(1950.0)	P	Q
n	0.36551743	Peri. 105.34564	+0.72148749	-0.64052760
a	1.9373020	Node 295.26183	+0.46922240	+0.73160824
e	0.1090001	Incl. 16.90793	+0.50920147	+0.23339618
P	2.70	H 13.7	G 0.15	

Residuals in seconds of arc

821224	095	(0.2+ 4.2+)	830121	688	1.1+ 1.5-	890403	474	0.9+ 0.7-
830109	688	0.4+ 0.5+	830121	688	(4.0+ 0.5+)	890403	474	0.4- 1.2-
830109	688	1.8- 1.5-	830211	688	1.6+ 0.4-	890406	474	0.7- 0.7+
830110	675	(8.7+ 2.5+)	830211	688	2.3+ 0.8-	890406	474	0.0 0.5+
830111	675	0.1+ 0.5+	870926	675	0.2+ 0.0	901022	801	0.1+ 0.8-
830112	675	1.6- 1.9+	871018	675	0.5- 1.3+	901022	801	0.3+ 0.5-
830112	675	2.1- 2.8+	871020	675	0.5- 0.1-	901121	801	0.7- 0.0
830116	688	0.0 0.4-	871122	675	0.4- 0.2-	901121	801	0.1- 0.3-
830116	688	1.3+ 0.3-	871123	675	0.9+ 1.0-			

(4691)* 1983 TU = 1973 YV2 = 1987 YG5

Discovered 1983 Oct. 7 by A. Mrkos at Klet.

Id. H. Kaneda (MPC 15883)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	170.97066	(1950.0)	P	Q
n	0.28901332	Peri. 298.43892	+0.94164469	+0.32946096
a	2.2656395	Node 42.42721	-0.26181008	+0.84568400
e	0.1941308	Incl. 5.87002	-0.21156737	+0.41985003
P	3.41	H 13.4	G 0.15	

Residuals in seconds of arc

731221	095	0.2- 0.3+	831104	688	0.5+ 0.5+	901115	896	0.2- 2.4+
831007	046	0.1- 1.1-	831106	046	0.0 1.0+	901116	801	0.1+ 0.1-
831008	046	(4.1- 0.4-)	831106	046	0.1- 0.6+	901116	801	0.0 0.1-
831011	688	1.2+ 0.1+	831107	046	0.4- 0.0	901117	886	1.5- 0.8+
831011	688	1.8+ 0.2+	831107	046	0.3- 0.3-	901117	886	1.7+ 0.2+
831012	688	2.4+ 0.8-	871224	010	0.4- 0.7-	901121	801	0.2+ 0.8+
831012	688	0.5+ 0.2+	871224	010	0.3+ 0.3-	901121	801	0.4+ 0.9+
831016	046	0.2- 0.2+	871224	010	0.1- 1.0-	901206	046	1.2- 0.2+
831016	046	0.7- 0.0	901111	675	2.3+ 0.4+	901206	046	1.7+ 1.9-
831102	046	2.5- 0.9-	901111	675	0.5- 0.7-	901207	046	2.3- 0.6-
831102	046	2.2- 1.1-	901112	675	0.4- 0.5-	901207	046	1.5- 0.1+
831104	688	0.3+ 0.2+	901113	675	0.3+ 0.4-			

(4692)* 1983 VM7 = 1973 YP1 = 1981 AX2 = 1981 BZ = 1988 BT1

Discovered 1983 Nov. 4 by B. A. Skiff at the Anderson Mesa Station of the Lowell Observatory.

Id. K. Hurukawa (MPC 9752), S. Nakano (MPC 13158)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	147.58711	(1950.0)	P	Q
n	0.29074911	Peri. 322.43922	+0.88590940	-0.46014766
a	2.2566132	Node 65.05429	+0.43968907	+0.79281567
e	0.1482035	Incl. 3.70271	+0.14777705	+0.39963413
P	3.39	H 13.6	G 0.15	

Residuals in seconds of arc

731220	095	0.2+ 1.0+	831101	330	(3.3- 1.7+)	880122	511	1.3- 2.1+
731221	095	(1.7- 7.6-)	831104	688	1.7+ 1.1-	901114	801	0.3- 0.0
810108	381	0.5- 0.6-	831104	675	0.4- 2.1+	901114	801	0.3- 0.5+
810108	381	1.2- 0.6-	831104	688	0.1+ 1.5-	901115	801	0.8- 1.4+
810130	095	0.6+ 1.3-	831107	688	0.8+ 0.9-	901213	801	0.5+ 0.0
831028	330	(11.8+ 4.3+)	831107	688	0.4+ 0.9-	901213	801	0.5+ 0.0
831030	675	2.2- 1.2+	880122	511	2.1+ 1.1-	901214	801	0.4+ 0.1-

(4693)* 1983 WH = 1976 UC5 = 1988 JU1

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

Id. S. Nakano (MPC 14348), C. M. Bardwell (ibid.), W. Landgraf (ibid.)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	96.33136	(1950.0)	P	Q
n	0.28635592	Peri. 209.02966	-0.06785714	-0.99473472
a	2.2796348	Node 244.95214	+0.93091151	-0.03543712
e	0.0834920	Incl. 4.86294	+0.35888602	-0.09616153
P	3.44	H 13.4	G 0.15	

Residuals in seconds of arc

761030	095	1.6+	1.6+	831209	688	(2.8-	2.8-)	901115	801	0.5+	0.8+
831128	688	1.1-	0.5+	831229	688	1.2-	1.8-	901115	801	0.4+	0.5+
831128	688	2.1-	0.3+	831229	688	1.1+	1.2-	901210	886	1.0-	1.6+ Y
831201	688	0.9+	2.0+	840102	688	0.0	1.5-	901210	886	(4.2-	1.3+)Y
831201	688	0.2-	0.8+	840104	688	0.1+	2.2-	901213	801	0.5+	0.0
831205	688	0.5+	0.4-	840104	688	(2.7+	4.0-)	901213	801	0.6+	0.3-
831205	688	(2.5-	2.4-)	860911	095	0.4+	1.2-	901215	801	0.6+	0.2-
831206	688	0.3-	0.3-	880511	413	0.3-	0.0	901215	801	0.7+	0.0
831209	688	0.8-	0.6-	880511	413	(4.5-	0.5-)				

(4694)* 1985 PM = 1981 SP7 = 1981 WD5

Discovered 1985 Aug. 14 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Id. K. Hurukawa (JAM 2023)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	158.78451	(1950.0)	P	Q
n	0.21977639	Peri. 338.07822	+0.64720040	+0.76092295
a	2.7194559	Node 332.18852	-0.68387343	+0.55280003
e	0.1901374	Incl. 5.67411	-0.33682158	+0.33971810
P	4.48	H 12.8	G 0.15	

Residuals in seconds of arc

810929	095	0.1+	0.9+	850911	809	0.2+	0.7-	850920	809	1.6-	0.4+
811002	095	0.0	0.2-	850911	809	0.5+	0.6-	850921	809	0.2-	0.7-
811124	095	0.4-	0.9+	850912	809	1.0+	0.8-	850921	809	0.0	0.8-
811124	095	1.0-	1.3+	850912	809	0.9+	0.9-	850921	809	0.1+	0.8-
850814	688	0.5+	0.4-	850912	809	0.8+	1.0-	890531	808	1.6+	1.4-
850814	688	0.5+	0.9-	850912	688	1.7+	1.3-	890531	808	1.2+	1.6-
850820	688	1.6-	1.5+	850914	809	0.2-	0.1-	890602	808	0.0	1.4+
850820	688	0.2+	0.6+	850914	809	0.2-	0.2-	890602	808	0.5-	1.6+
850822	688	1.0+	0.6+	850914	809	0.3-	0.3-	890608	474	0.1+	0.7-
850822	688	0.1+	0.5+	850915	809	(2.8-	0.0)	890608	474	0.1-	0.3-
850905	809	0.1+	0.1-	850915	809	(2.5-	0.0)	890630	474	1.2-	1.8+
850905	809	0.4+	0.1+	850915	809	(2.4-	0.0)	890630	474	0.9-	1.3+
850905	809	0.7+	0.2+	850916	809	(2.5-	0.2+)	901021	801	0.0	0.2+
850907	809	0.9+	0.6+	850916	809	(2.5-	0.2+)	901021	801	0.0	0.2+
850907	809	0.7+	0.6+	850917	809	(2.5-	0.2+)	901111	675	0.0	0.9-
850907	809	0.8+	0.6+	850919	809	(3.2-	1.3-)	901111	675	0.1+	0.6-
850910	809	1.1-	0.8+	850919	809	(3.0-	1.2-)	901113	675	0.8+	0.5-
850910	809	1.1-	0.8+	850919	809	(3.2-	1.2-)	901113	675	0.7-	0.6-
850910	809	1.1-	0.7+	850920	809	1.6-	0.4+	901115	801	0.4+	0.7+
850911	809	0.1+	0.6-	850920	809	1.7-	0.5+	901115	801	0.2-	0.8+

(4695)* 1985 RU3 = A911 UF = 1952 BU1 = 1972 RY1 = 1981 UP15 = 1983 EO1

Discovered 1985 Sept. 7 by H. Debehogne at the European Southern Observatory.

Id. C. M. Bardwell (MPC 14020), L. D. Schmadel (ibid.)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell

M	80.63884	(1950.0)	P	Q
n	0.22620841	Peri. 274.38218	-0.02123102	-0.99969902
a	2.6676584	Node 176.75712	+0.98164043	-0.02317556
e	0.1403828	Incl. 12.55086	+0.18955558	+0.00804742
P	4.36	H 12.1	G 0.15	

Residuals in seconds of arc

111029	024(41.6+	38.2-)X	850915	809	1.1+	0.7+	850920	809	0.1-	0.1+
520128	711	0.1-	1.4- Y	850915	809	1.4+	0.6+	850920	809	0.1-	0.2+
720911	095	2.0+	3.2-	850915	809	1.2+	1.1+	850920	809	0.1+	0.2+
811023	095	1.5-	0.4+	850915	809	1.7+	1.2+	850920	809	0.3+	0.1-
830311	381	1.3-	0.1-	850915	809	2.1+	1.3+	850920	809	0.4+	0.0
830311	381	0.8+	1.7-	850916	809	0.5+	1.1+	850921	809	0.3-	0.1-
830409	095	0.6-	0.6-	850916	809	0.5+	1.0+	850921	809	0.0	0.0
830411	095	0.9+	1.8+	850916	809	0.7+	0.8+	850921	809	0.0	0.0
850907	809	0.6-	0.9-	850918	809	1.0-	0.5-	850921	809	0.1+	0.2-
850907	809	0.6-	0.9-	850918	809	0.9-	0.5-	850921	809	0.2+	0.5-
850907	809	0.6-	1.0-	850918	809	0.6-	0.4-	850921	809	0.3+	0.4-
850908	809	0.6-	1.1-	850918	809	0.9-	0.2-	850922	809	0.1+	0.1+
850908	809	0.4-	1.0-	850918	809	0.5-	0.0	850922	809	0.0	0.2+
850908	809	0.3-	1.0-	850918	809	0.0	0.2-	901017	801	0.6+	0.3+
850911	809	0.8-	0.3+	850919	809	0.9-	0.1-	901017	801	0.9+	0.1-
850911	809	0.7-	0.4+	850919	809	0.9-	0.1-	901114	801	0.1+	0.4+
850911	809	0.3-	0.5+	850919	809	0.7-	0.3-	901114	801	0.3+	0.0
850914	809	0.2+	0.3+	850919	809	0.2-	0.2-	901115	801	0.2-	0.2+
850914	809	0.2+	0.1+	850919	809	0.3-	0.2-	901115	801	0.1-	0.6+
850914	809	0.3+	0.1-	850919	809	0.5-	0.1-				
850915	809	0.9+	0.8+	850920	809	0.3-	0.1+				

(4696)* 1985 TP = 1980 RR2 = 1989 NJ1

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

Id. H. E. Holt (MPC 15066), D. W. E. Green (ibid.)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Marsden

M	164.77771	(1950.0)	P	Q
n	0.20422386	Peri. 129.80615	+0.61688423	+0.78705328
a	2.8558259	Node 178.28190	-0.73177920	+0.57402260
e	0.0559065	Incl. 1.89005	-0.28974654	+0.22593182
P	4.83	H 12.5	G 0.15	

Residuals in seconds of arc

800908	095	1.2+	1.2-	851107	688	0.2+	2.1-	890802	675	1.2-	3.8-
850915	095	2.1+	1.9+	851107	688	1.8+	3.2-	890802	675	0.7-	1.8-
850920	095	0.1-	2.2+	890707	675	2.9+	1.2+	901017	801	0.7-	0.5+
850922	095	1.0+	0.5+	890707	675	0.0	0.7+	901017	801	0.7-	0.5+
851015	688	0.5+	0.2+	890710	675	1.6-	2.4-	901017	364	0.2-	0.5+
851015	688	0.5+	0.3+	890710	675	1.0-	1.6+	901017	364	2.1+	1.6+
851020	688	2.3-	0.1-	890729	675	1.3+	1.4+	901114	801	0.9-	0.6+
851020	688	3.9-	1.9-	890729	675	0.1+	3.7+				

(4697)* 1986 QO = 1971 SW2 = 1989 GO7

Discovered 1986 Aug. 26 by H. Debehogne at the European Southern Observatory.

Id. H. Kaneda (MPC 15885)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	148.97318	(1950.0)	P	Q
n	0.25977350	Peri. 51.85330	+0.70167233	+0.71186152
a	2.4326119	Node 262.73703	-0.66281660	+0.63663386
e	0.1758308	Incl. 1.74180	-0.26140026	+0.29656451
P	3.79	H 13.7	G 0.15	

Residuals in seconds of arc

710927	095	0.3- 0.8+	860830	809	0.2+ 1.0-	900916	675	0.4- 0.2-
860808	095	0.5- 1.7+	860830	095	0.0 1.1+	900917	675	1.9+ 1.3-
860813	095	0.7- 0.7+	860831	809	0.5- 0.0	900917	675	0.8+ 2.3-
860826	809	0.2- 0.3+	860831	809	0.6- 0.2-	900919	675	0.3- 0.1-
860826	809	0.5+ 0.1+	860831	809	0.2+ 0.4-	900919	675	0.2- 0.1-
860826	809	1.5+ 0.2+	860907	095	0.5- 0.8+	900921	801	0.1- 0.5+
860828	809	0.0 0.1-	890409	809	1.7- 1.7-	900921	801	0.0 0.4+
860828	809	0.4+ 0.2-	890409	809	0.1- 0.3-	901015	801	0.1- 0.4+
860828	809	0.7+ 0.1-	890409	809	0.6+ 0.9-	901015	801	0.2- 0.4+
860830	809	0.9- 1.0-	900915	675	0.5+ 2.0-	901016	801	0.1- 0.4+
860830	809	0.2- 0.9-	900916	675	0.2- 0.3-	901016	801	0.1- 0.5+

(4698)* 1986 RO1 = 1986 PL4 = 1975 FL = 1985 DY3

Discovered 1986 Sept. 4 by A. Mrkos at Klet.

Id. S. Nakano (MPC 14788), T. Kobayashi (ibid.)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	326.76335	(1950.0)	P	Q
n	0.29688549	Peri. 285.23306	-0.80889971	+0.58693000
a	2.2254102	Node 290.71828	-0.52422620	-0.74660094
e	0.0762671	Incl. 2.11756	-0.26621073	-0.31320952
P	3.32	H 13.4	G 0.15	

Residuals in seconds of arc

750317	095	1.6+ 1.8+	860904	046	0.5- 1.1-	901113	675	0.9- 0.3+
850220	675	1.3- 2.2-	860905	046	0.4+ 0.4-	901116	801	0.0 0.0
850222	675	1.8- 1.6-	860905	046	0.8+ 1.8-	901206	046	(0.6+ 2.9-)
860806	801	0.2- 1.5+	890706	675	(11.4+ 1.2-)	901206	046	(3.8+ 1.7+)
860812	095	1.9- 0.8+	890706	675	1.7+ 2.3-	901207	046	2.0+ 1.7-
860831	010	(6.4- 0.3-)	901111	675	0.3- 0.6-	901207	046	1.9+ 1.1+
860831	010	1.0+ 0.4+	901111	675	0.8- 0.1+	901215	801	0.4- 0.1-
860904	046	0.7- 0.7-	901112	675	0.1- 0.1-	901215	801	0.2- 0.5-

(4699)* 1986 VE = 1978 WC3 = 1982 XO

Discovered 1986 Nov. 4 by R. H. McNaught at Siding Spring.

Id. C. M. Bardwell (MPC 13467)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell

M	96.26657	(1950.0)	P	Q
n	0.24135678	Peri. 142.48015	+0.87771613	-0.43651117
a	2.5548361	Node 244.51323	+0.36918501	+0.87899524
e	0.1833859	Incl. 12.64897	+0.30547803	+0.19189934
P	4.08	H 13.5	G 0.15	

Residuals in seconds of arc

781129	675	1.4- 0.1+	861104	413	(2.5+ 5.1+)	901017	801	0.3+ 0.3+
781130	675	0.1- 1.6+	861105	413	1.5- 2.6-	901017	801	0.0 0.5+
821213	381	0.0 0.1-	861105	413	0.7+ 0.9-	901018	801	0.5+ 0.4+
821213	381	1.0+ 0.6+	861105	010	(9.8- 0.3-)	901018	801	0.5+ 0.4+
821214	381	2.0+ 1.1-	861105	010	(3.3- 1.9+)	901114	801	0.5- 0.1+
821214	381	1.4+ 0.2-	861108	413	1.0+ 0.9+	901114	801	0.3- 0.1+
840329	413	0.4- 0.3+	861109	413	0.0 0.8-	901120	801	0.2- 0.0
840329	413	0.3+ 0.5-	861202	413	0.5- 0.4+	901120	801	0.1- 0.8+
861104	413	2.1- 0.9-	861203	413	0.2- 0.8+			

(4700)* 1986 VV6 = 1949 UM = 1953 VZ = 1955 FS = 1971 BB1 = 1982 VJ1
Discovered 1986 Nov. 6 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.
Id. H. Oishi (MPC 12584, MPC 13694)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5			Oishi
M 60.05486	(1950.0)	P	Q
n 0.24036342	Peri. 11.59683	+0.03335581	-0.99519359
a 2.5618702	Node 76.54200	+0.90918808	-0.00804192
e 0.2027404	Incl. 5.43237	+0.41504749	+0.09759632
P 4.10	H 12.6	G 0.15	

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

491028	760(0.03-	0.01-)X	861106	688	1.0+	0.4+	901020	385	1.9-	0.1-
531105	760	1.5+	2.7-	861106	688	0.2+	1.2+	901020	894	0.6-	0.8+
531105	760	0.1+	1.0-	861130	381	0.4-	0.0	901020	894	1.1-	0.8+
550329	760	1.8+	0.9+	861130	381	0.2-	0.2-	901021	801	0.2-	0.4+
550329	760	0.8-	1.2+	861201	381	0.8-	0.7-	901021	801	0.2-	0.4+
710125	095	(5.0-	8.3-)	861201	381	0.0	0.5-	901027	894	1.7+	0.8+
821113	095	2.4+	1.3+	901019	385	2.7+	0.2+	901111	894	1.2-	0.9-
821115	688	1.7-	1.8-	901019	385	0.8-	2.2+	901111	894	1.3-	1.0-
830106	095	0.2+	1.1-	901020	385	0.1+	2.2+				

(4701)* 1986 VW6 = 1968 TL = 1977 VP1 = 1977 VX1 = 1983 AW2
Discovered 1986 Nov. 6 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.
Id. H. Oishi (MPC 12584), L. D. Schmadel (ibid.)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5			Oishi
M 64.61131	(1950.0)	P	Q
n 0.22151434	Peri. 287.14671	+0.85063083	-0.52208927
a 2.7052131	Node 104.36519	+0.50342731	+0.77476841
e 0.1377485	Incl. 3.67236	+0.15161835	+0.35659040
P 4.45	H 13.0	G 0.15	

Residuals in seconds of arc

681002	095	0.8-	0.1-	861130	381	0.9-	0.3-	900919	801	0.2-	0.8+
771103	330	0.3+	1.3+	861130	381	0.1-	0.3-	900921	801	0.2+	0.6-
771112	330	0.1+	1.7+	861201	381	0.4+	0.4-	900921	801	0.0	0.5-
830110	675	0.8-	1.8-	861201	381	0.6-	0.4-	901016	801	0.2-	0.1-
830110	675	(9.9-	1.2-)	900825	675	0.2+	0.4+	901016	801	0.2-	0.1+
830111	675	(1.7-	3.4-)	900825	675	0.1-	0.4+	901017	801	0.4-	0.0
830112	675	0.9+	1.6+	900826	675	0.1+	0.1+	901017	801	0.4-	0.1+
861106	688	1.7+	0.3+	900826	675	0.3-	0.3+				
861106	688	0.7-	1.0-	900919	801	1.3+	2.1-				

(4702)* 1987 HW = 1973 GP = 1980 XU1 = 1984 SG7 = 1989 UJ5
Discovered 1987 Apr. 23 by A. Mrkos at Klet.
Id. S. Nakano (MPC 16233)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5			Nakano
M 45.72787	(1950.0)	P	Q
n 0.21109537	Peri. 132.25272	-0.88656044	-0.45907201
a 2.7935101	Node 20.62210	+0.36210791	-0.76549098
e 0.0933287	Incl. 9.33456	+0.28790355	-0.45086189
P 4.67	H 12.1	G 0.15	

Residuals in seconds of arc

730401	095	1.0+	1.3+		870424	046	(1.2+ | 3.5-)	891030	807	0.4+	0.3-
801210	095	0.6+	0.4-		870427	046	(2.0- | 3.7-)	891101	807	0.7+	0.5-
840924	071	2.9-	0.4-		870427	046	1.9-	1.1-	901116	801	0.2-	0.4+
870423	046	0.1-	1.3+		890926	809	0.6+	0.3+	901116	801	0.8-	0.0
870423	046	0.7-	0.7-		890926	809	0.8+	0.1+	901220	801	0.0	0.3+
870424	046	1.8+	2.2-		890926	809	0.7+	0.1+	901220	801	0.1-	0.4+

(4703)* 1988 BL = 1961 CQ = 1961 EH = 1978 EB6 = 1980 XB1

Discovered 1988 Jan. 16 by M. Mukai and M. Takeishi at JCPM Kagoshima Station.

Id. S. Nakano (MPC 12945)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	96.97485		(1950.0)	P	Q
n	0.29183265	Peri.	295.60803	+0.31655247	-0.94630181
a	2.2510240	Node	135.76878	+0.90052784	+0.27805728
e	0.1156543	Incl.	5.39878	+0.29806733	+0.16491525
P	3.38	H	13.1	G 0.15	

Residuals in seconds of arc

610215	033	0.5-	0.0		880214	391	0.3+	0.8+	901017	801	0.1-	0.1+
610215	033	0.7-	0.3+		880214	391	0.4+	0.5+	901017	801	0.3-	0.1+
610217	033	(4.2- | 1.9+)		880215	881	0.3+	1.4+	901020	801	0.2-	0.5+
610217	033	2.3+	1.1-		880215	881	0.4+	1.2+	901020	801	0.3-	0.6+
610309	033	0.6-	0.7+		880215	364	0.9+	0.3+	901020	675	1.1+	0.9-
780306	095	0.8-	0.4-		880215	364	0.7-	1.2+	901020	675	0.1+	0.9-
801207	330	(11.4- | 6.0-)		880216	391	0.2-	0.7-	901022	675	0.4+	1.2-
801210	330	1.1-	0.9+		880216	391	0.6-	1.5-	901022	675	0.2+	1.4-
880116	364	(0.8- | 2.7+)		880216	391	0.4+	0.0	901113	364	0.7-	0.1-
880116	364	0.8+	0.6-		880216	391	0.9-	0.2-	901113	364	0.2-	0.5-
880127	364	1.0+	1.1-		880217	391	0.5+	1.0-	901114	364	0.8+	1.1+
880127	364	0.2-	1.8-		880217	391	(2.5- | 1.5+)	901114	364	1.0+	0.7+
880127	364	2.0+	1.0+		880217	391	1.5-	0.8+	901115	364	0.7-	0.8+
880127	364	0.5+	0.8-		880217	391	0.0	1.5+	901115	364	0.2-	0.4+
880210	364	2.0-	0.1-		880218	364	0.2+	0.3+				
880210	364	2.1-	0.1+		880218	364	0.9+	1.9-				

(4704)* 1988 BE5 = 5027 T-2

Discovered 1988 Jan. 28 by R. H. McNaught at Siding Spring.

Id. S. Nakano (MPC 15087)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	334.25288		(1950.0)	P	Q
n	0.23187108	Peri.	281.22350	-0.76991231	-0.62338534
a	2.6240473	Node	220.41961	+0.63612166	-0.73267281
e	0.1341227	Incl.	12.15094	+0.05083570	-0.27309571
P	4.25	H	13.4	G 0.15	

Residuals in seconds of arc

730919	675	(4.4+ | 2.4+)		850915	413	1.0-	2.4+	900917	675	0.1+	1.7-
730920	675	0.4-	0.2+		880124	413	0.8-	1.4+	900917	675	0.2+	1.8-
730920	675	0.1+	1.1+		880128	413	0.5-	0.2+	900920	675	0.8-	2.3-
730924	675	0.7+	1.3+		880128	413	0.6+	0.5+	900920	675	0.2-	0.1-
730924	675	0.4-	0.9+		880223	413	0.0	0.0	901012	413	(3.1- | 3.3-)
730925	675	0.4-	0.3+		880223	413	0.5-	0.4+	901012	413	1.5+	2.5+
730925	675	0.4-	0.7-		880312	413	0.7+	0.8-				
850915	413	0.7+	1.0-		880312	413	0.4+	0.6-				

(4705)* 1988 CK = 1951 XP = 1970 AY = 1972 TN5 = 1979 QC9

Discovered 1988 Feb. 13 at the Osservatorio S. Vittore.

Id. S. Nakano (MPC 13160)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	76.46778	(1950.0)	P	Q
n	0.27701334	Peri. 119.71236	+0.03010869	-0.99642649
a	2.3306063	Node 328.26584	+0.85734670	+0.06633305
e	0.1271309	Incl. 8.62903	+0.51385805	-0.05228941
P	3.56	H 13.4	G 0.15	

Residuals in seconds of arc

511205	711	1.5+	6.5-	Y	880215	552	0.4+	0.3-	901021	801	0.0	0.8+
700105	095	(19.4+	0.9+)		880216	809	(2.8-	0.6-)	901113	552	1.4+	1.3+
721006	095	1.1-	1.2-		880216	809	(2.2- | 0.1-)	901113	552	0.3-	0.7+
790828	095	0.6+	1.9-		880222	552	0.6+	0.1+	901114	801	0.2-	1.5+
860908	095	2.5+	1.1-		880222	552	0.3+	0.2+	901114	801	0.1-	1.4+
880213	552	1.6-	1.2-		880309	552	0.8-	0.2+	901116	801	0.1-	1.3+
880214	552	(0.4+ | 2.6-)		880309	552	0.7-	0.6+	901116	801	0.2-	1.3+
880214	552	1.8+	0.5+		880314	552	0.8-	0.4+	901119	552	1.5-	0.5-
880214	552	0.4+	0.3-		880314	552	1.4-	0.2-	901119	552	1.9-	1.2-
880215	552	0.9+	0.6-		901021	801	0.1+	0.7+				

(4706)* 1988 DR = 1971 DE1 = 1973 UV4 = 1973 YE = 1976 SH6

Discovered 1988 Feb. 16 by R. Rajamohan at Kavalur.

Id. H. Kaneda (MPC 16027)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	71.45384	(1950.0)	P	Q
n	0.28857806	Peri. 283.27172	-0.19566547	-0.98065776
a	2.2679171	Node 177.99119	+0.94615692	-0.19012748
e	0.1749837	Incl. 8.26244	+0.25788004	-0.04649617
P	3.42	H 13.4	G 0.15	

Residuals in seconds of arc

710218	095	0.3+	0.7+		880217	220	(4.0- | 0.6-)Y	901019	809	1.4+	1.4-
710223	095	(3.9+	4.5+)		880312	675	(5.7+	2.1+)	901020	402	0.8+	0.1-
731021	688	0.4+	0.5-		880313	220	1.9+	0.2- Y	901020	402	0.6+	1.0-
731023	688	1.5+	1.5-		880314	220	0.5+	0.8+ Y	901021	402	1.0-	1.0-
731219	095	1.0-	1.3+		880315	675	(4.6- | 2.1+)	901021	402	1.0-	0.7+
760925	095	0.3-	0.9+		901016	809	0.5+	0.3+	901116	801	0.3-	0.7+
880216	220	0.1+	0.8-	Y	901016	809	0.1-	1.2+	901116	801	1.4-	0.2+
880217	220	2.2-	0.2-	Y	901016	809	0.3-	0.9+				

(4707)* 1988 PY

Discovered 1988 Aug. 13 by C. S. Shoemaker at Palomar.

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Marsden

M	73.36055	(1950.0)	P	Q
n	0.08387739	Peri. 64.63762	+0.96412028	-0.24774043
a	5.1685983	Node 309.55626	+0.17642772	+0.86642374
e	0.1237076	Incl. 7.10601	+0.19835660	+0.43351422
P	11.75	H 10.2	G 0.15	

Residuals in seconds of arc

880813	675	0.7+	0.1+		880918	511	1.4-	1.3-	891101	675	0.3-	0.9+
880814	511	0.8-	0.6+		880918	511	2.4-	0.7-	891102	675	0.7-	1.3+
880814	511	0.5+	1.8+		881007	675	0.4+	0.9+	891122	675	0.2-	0.2+
880814	675	2.1+	0.5-		881007	675	0.6+	0.2+	891122	675	0.8+	0.8-
880815	511	0.8-	0.2+		881009	675	0.5+	0.0	901020	675	1.0-	0.5-
880816	511	1.0-	0.6+		881009	675	0.1+	1.0-	901022	675	0.8-	0.5+
880818	675	0.8-	0.1-		881105	675	1.4+	1.2-	901111	675	2.0+	0.5+
880910	675	0.3+	0.6+		881108	675	0.0	0.1+	901111	675	0.0	1.1-
880912	675	0.6+	1.0+		890903	675	0.4+	0.7-	901112	675	0.1-	0.1+
880913	675	0.2+	0.7+		890903	675	1.0+	1.5-	901113	675	0.4-	0.4-
880916	511	(9.2+ | 6.3+)		890927	675	0.3-	0.5+	901116	801	0.1-	1.3+
880917	511	(6.2+ | 0.9+)		890929	675	0.5+	0.0	901116	801	0.0	1.2+
880917	511	0.7-	0.7-		890929	675	0.3-	1.9-				

(4708)* 1988 RT
Discovered 1988 Sept. 11 by C. S. Shoemaker at Palomar.

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5			Marsden
M 64.53102	(1950.0)	P	Q
n 0.08072283	Peri. 103.44837	+0.90732404	-0.40315372
a 5.3023916	Node 280.43288	+0.32328658	+0.85040125
e 0.0600935	Incl. 6.96688	+0.26879149	+0.33806034
P 12.21	H 9.4	G 0.15	

Residuals in seconds of arc

880911 675	0.8+	0.2+	890929 675	0.3-	0.2-	901020 675	0.2-	0.1-
880916 675	0.1+	0.2+	890929 675	0.2-	0.7-	901022 675	0.1-	0.3-
881008 675	0.1+	0.4+	891102 675	1.0-	0.6+	901113 675	1.1-	0.7-
881010 675	1.3-	1.0+	891103 675	0.3+	0.6-	901114 675	0.8-	0.4-
881106 675	0.3-	0.0	891104 095	(3.8+	0.6-)	901115 801	0.2+	1.0+
881108 675	0.9-	1.0+	891122 675	1.2+	1.8-	901115 801	0.2+	1.0+
890927 675	0.4-	0.3+	891122 675	2.1+	1.7-	901120 801	0.2+	0.9+
890928 675	0.4-	0.5-	901020 801	0.4-	0.6+	901120 801	0.3+	0.9+
890928 675	0.4+	0.4-	901020 801	1.4+	0.0			

(4709)* 1988 TU2 = 1954 UM1 = 1977 UT2
Discovered 1988 Oct. 12 by C. S. Shoemaker at Palomar.
Id. B. G. Marsden (MPC 15892)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5			Bardwell
M 115.51452	(1950.0)	P	Q
n 0.08442961	Peri. 93.98058	+0.87967835	+0.23711505
a 5.1460365	Node 252.68596	-0.35626855	+0.90277535
e 0.0212846	Incl. 25.58228	+0.31502179	+0.35884973
P 11.67	H 9.0	G 0.15	

Residuals in seconds of arc

541024 760	1.3+	0.7+	891104 675	0.7-	0.5-	901115 801	0.4+	0.2+
541024 760	1.3-	1.2+	891104 675	1.0-	0.3-	901115 801	0.3+	0.2+
771018 033	0.3-	0.3-	891122 675	0.3+	0.7-	901121 801	0.2+	0.3+
771018 033	0.1+	0.6-	891122 675	1.1+	0.7-	901121 801	0.0	0.4+
771018 033	0.3-	0.2-	901020 801	0.6+	0.3+	901207 875	1.7-	0.9+
771018 033	0.4-	0.3-	901020 801	0.7+	0.1+	901207 875	0.4-	0.0
880914 675	0.1+	0.9+	901112 675	0.5+	0.9-	901210 875	0.1-	0.7-
880914 675	0.6-	0.5-	901112 675	0.7+	1.7+	901210 875	1.1-	1.1-
881012 675	0.4+	0.1-	901114 675	0.6+	0.7-			
881012 675	0.7+	0.2+	901114 675	0.2+	0.6-			

(4710)* 1989 AX2 = 1976 JV = 1987 QL7 = 1990 HD2
Discovered 1989 Jan. 4 by R. H. McNaught at Siding Spring.

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5			Kaneda
M 287.74324	(1950.0)	P	Q
n 0.29308476	Peri. 233.71267	-0.84513944	-0.52743448
a 2.2446083	Node 274.30350	+0.51410912	-0.75749096
e 0.0921621	Incl. 4.99962	+0.14639376	-0.38473408
P 3.36	H 12.9	G 0.15	

Residuals in seconds of arc

760502 095	0.8-	0.9-	881229 413	1.0-	0.5-	900427 413	0.5+	0.5+
860320 413	1.7+	0.4+	890104 413	0.8-	1.9+	900427 413	1.2-	0.2+
870815 413	0.4+	0.1-	890104 413	0.4-	0.7+	900430 413	0.3+	0.2-
870831 054	0.6+	0.7+	890106 413	0.4+	0.3+	900430 413	1.4-	0.1+
881229 413	0.2+	0.7+	890106 413	1.0+	2.1-	900827 413	0.5-	0.4+

(4711)* 1989 KD = 1969 AO = 1975 YB
Discovered 1989 May 31 by H. E. Holt at Palomar.
Id. B. G. Marsden (MPC 15069)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Marsden

M 166.79892	(1950.0)	P	Q	
n 0.26775592	Peri. 242.91008	+0.98494923	+0.05756852	
a 2.3840206	Node 113.40834	-0.00115969	+0.94508315	
e 0.2555521	Incl. 10.22950	-0.17283999	+0.32171992	
P 3.68	H 12.3	G 0.15		

Residuals in seconds of arc

690115	095	(0.9+	7.6-)	890601	675	0.9+	0.8-	901017	801	0.5-	0.5-
751230	805	0.3+	0.3-	890602	675	1.0+	1.1-	901020	801	0.4+	0.6-
751231	805	0.3+	1.6-	890602	675	0.5+	1.0-	901020	801	0.3+	0.5-
880313	399	1.3-	0.5+	890707	675	(0.2+	4.4-)	901115	801	0.2-	0.3-
880313	399	0.4-	0.7-	890710	675	1.6-	0.9+	901115	801	0.1+	0.3-
880313	399	1.4+	0.2+	890710	675	1.7-	0.4+	901116	801	0.1-	0.3-
890531	675	0.7-	0.1+	890729	675	0.2+	0.9-	901116	801	0.3-	1.2+
890531	675	0.1-	0.7+	890729	675	1.0-	0.6-				
890601	675	1.2+	0.6-	901017	801	0.6+	0.2-				

(4712)* 1989 QE = 1931 EN = 1950 RB1 = 1964 CB = 1979 YN2 = 1987 FO1

Discovered 1989 Aug. 25 by K. Endate and K. Watanabe at Kitami.

Id. S. Nakano (MPC 15255)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M 168.14147	(1950.0)	P	Q	
n 0.17623942	Peri. 341.15592	+0.71502291	+0.69304670	
a 3.1506538	Node 334.23023	-0.61118336	+0.55593416	
e 0.1342790	Incl. 12.19085	-0.33940704	+0.45893734	
P 5.59	H 10.8	G 0.15		

Residuals in seconds of arc

310310	754	1.0+	0.5+	890826	400	0.9-	1.4-	890906	511	(3.5-	3.5-)
310312	754	(12.6-	1.3-)	890829	657	1.6-	1.0-	890908	511	(4.6-	1.4-)
500911	711	3.7+	4.2- Y	890829	657	0.6-	0.9-	890908	511	(2.8-	1.1-)
640215	760	1.2-	0.8-	890829	400	0.8+	1.8+	890923	400	1.2-	0.2-
640215	760	2.3-	1.2-	890829	400	0.0	2.0+	890923	400	1.4-	0.5+
791224	095	2.0-	0.4+	890830	657	0.9+	1.4+	890923	400	1.6-	0.5+
870322	033	0.1+	1.0-	890830	657	1.2-	0.8-	901113	400	0.9+	1.1+
870322	033	0.3-	1.1-	890830	552	1.0+	0.1-	901113	400	0.9+	0.3+
890825	400	1.9+	0.1+	890830	552	1.3+	0.1-	901215	400	0.7+	0.1-
890825	400	0.0	0.5+	890831	552	0.1+	0.4-	901215	400	0.9+	0.0
890825	400	0.6+	0.3-	890831	552	0.7-	0.4-				
890826	400	(4.0+	3.9-)	890906	511	(3.9-	4.3-)				

(4713)* 1989 QL

Discovered 1989 Aug. 26 by R. H. McNaught at Siding Spring.

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams

M 11.61645	(1950.0)	P	Q	
n 0.36864172	Peri. 152.22976	-0.25487777	+0.88982552	
a 1.9263405	Node 100.89864	-0.94315666	-0.14243117	
e 0.0735475	Incl. 22.67062	-0.21329049	-0.43350191	
P 2.67	H 12.7	G 0.15		

Residuals in seconds of arc

761024	413	0.6+	0.4+	890826	413	0.2-	0.9+	890921	413	0.3+	0.3-
761024	413	0.6+	0.0	890826	413	0.5-	0.7+	890921	413	0.0	1.1-
791224	413	(3.7-	1.3-)	890826	413	0.2+	0.4+	890924	413	1.0-	0.2-
791224	413	2.0-	0.9+	890903	413	0.0	0.2-	890924	413	1.1-	0.6-
810726	413	(1.4-	5.3+)	890903	413	0.8+	0.0	890926	413	0.3+	0.8-
810726	413	0.1+	0.4+	890903	413	0.0	0.2-	890928	413	0.9+	0.8+
810807	413	(0.1+	2.8-)	890903	413	1.1+	0.8-	890928	413	0.7-	0.8-
890826	413	0.4-	0.5-	890919	413	0.3+	0.1-	891009	413	0.1-	1.3+

891009	413	1.2-	0.1+		901121	801	0.0	0.5-		901214	801	0.2-	0.1-
901116	801	0.6+	0.2-		901121	801	0.3-	0.5-		901217	801	0.3+	0.9-
901116	801	0.5+	0.4-		901214	801	0.1-	0.0		901217	801	0.5+	0.4-

(4714)* 1989 SH = 1936 RQ = 1968 UE = 1978 QO

Discovered 1989 Sept. 29 by T. Fujii and K. Watanabe at Kitami.

Id. S. Nakano (MPC 15564), T. Kobayashi (ibid.)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	152.35505	(1950.0)		P	Q
n	0.18731399	Peri.	39.52295	+0.95923297	-0.27400305
a	3.0252126	Node	336.10586	+0.19601865	+0.82152658
e	0.1221214	Incl.	9.84290	+0.20358977	+0.50001640
P	5.26	H	11.3	G 0.15	

Residuals in seconds of arc

360911	024	2.0+	2.0-		890929	400	(1.2-	7.3+)		891021	400	0.9-	2.0+
681022	095	0.1+	2.8-		890929	400	(1.0+	8.1+)		891021	400	0.3-	1.4+
780831	095	2.2-	1.0+		890930	400	(2.9-	9.8+)		901121	801	0.2-	0.1+
780905	095	0.4-	1.6+		890930	400	(4.2-	9.7+)		901121	801	0.3-	0.0
890927	675	0.4+	0.9-		890930	400	(2.9-	8.7+)		901214	801	0.2+	0.2+
890928	675	0.4-	1.9-		891005	095	0.1-	1.8+		901214	801	0.1+	0.3+
890928	675	0.4-	1.1-		891005	095	0.2+	0.4+		901217	801	0.2+	0.0
890929	675	0.8+	1.3-		891009	400	0.2-	0.9+		901217	801	0.2+	0.1+
890929	675	0.3+	0.9-		891009	400	0.7+	0.8+					
890929	400	(0.3-	5.2+)		891021	400	0.3+	1.2+					

(4715)* 1989 TS1 = 1972 GL1 = 1983 DF

Discovered 1989 Oct. 9 by Y. Oshima at Gekko Observatory.

Id. H. Oishi (MPC 15566; unpublished)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Oishi

M	84.38498	(1950.0)		P	Q
n	0.08437248	Peri.	344.80079	+0.96898077	+0.24708026
a	5.1483591	Node	0.94353	-0.18005364	+0.72036686
e	0.0490561	Incl.	18.61007	-0.16928365	+0.64809177
P	11.68	H	9.3	G 0.15	

Residuals in seconds of arc

720409	805	0.2-	1.3+		891009	888	0.0	1.7+		891126	888	0.3-	0.8-
720409	805	1.6+	0.2+		891023	888	0.3-	0.1+		891126	888	0.5-	0.4-
720410	805	0.8+	1.0+		891023	888	1.0-	0.5-		901021	801	1.7+	0.6+
720410	805	0.1-	0.1-		891024	888	0.8+	0.3+		901021	801	1.5+	0.6+
830219	688	0.3-	0.1-		891025	888	0.5-	0.6-		901110	046	1.7-	1.4-
830219	688	1.6-	2.2-		891025	888	0.5-	1.4-		901110	046	1.9-	0.5-
890930	809	1.5+	0.0		891029	888	0.2+	0.1-		901113	046	0.4-	0.9-
890930	809	0.1+	0.5-		891029	888	0.4-	0.1+		901113	046	1.4-	0.1+
890930	809	1.1-	1.1-		891102	888	0.3+	1.2-		901114	801	0.4+	1.6+
891007	403	1.5+	2.5+	Y	891102	888	0.4-	0.8-		901114	801	0.4+	1.7+
891007	403	0.2-	0.6+	Y	891119	888	0.2-	0.2+					
891009	888	2.2+	1.2+		891119	888	0.3-	0.8-					

(4716)* 1989 UL5 = 1969 EA1 = 1978 RN16

Discovered 1989 Oct. 30 by S. J. Bus at Cerro Tololo.

Id. S. Nakano (MPC 16237)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	52.56847	(1950.0)		P	Q
n	0.17405582	Peri.	104.73253	-0.56174145	-0.82515253
a	3.1769498	Node	19.80026	+0.67482584	-0.49878586
e	0.1407281	Incl.	10.15911	+0.47859861	-0.26520928
P	5.66	H	11.7	G 0.15	

Residuals in seconds of arc

690312 095	1.2-	0.6+	890926 809	0.1-	0.2+	901114 801	0.1-	0.8-
690323 095	0.6-	3.3-	890928 809	0.2-	0.1+	901114 801	0.1-	0.6-
780908 010	0.5+	1.2-	890928 809	0.3+	0.2+	901217 801	0.0	1.2+
780909 010	(0.5+	19.2+)	890928 809	0.8+	0.3+	901217 801	0.0	1.2+
890926 809	0.1-	0.5+	891030 807	0.5+	1.6-	901220 801	0.3+	0.8+
890926 809	0.3-	0.4+	891101 807	0.3+	1.7-	901220 801	0.4+	0.6-

(4717)* 1989 WX = 1931 VB1 = 1978 TG4 = 1984 YR1

Discovered 1989 Nov. 20 by Y. Mizuno and T. Furuta at Kani.

Id. S. Nakano (MPC 15723), K. Ichikawa (ibid.)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	232.95303	(1950.0)	P	Q	
n	0.18779395	Peri.	245.83108	+0.73691333	+0.65193872
a	3.0200560	Node	72.95767	-0.53226939	+0.72256298
e	0.0912177	Incl.	10.77252	-0.41671098	+0.22995357
P	5.25	H	11.1	G 0.15	

Residuals in seconds of arc

311104 690	2.8+	0.2+	891125 403	0.4+	2.2+	891228 888	1.1-	0.2-
311106 690	1.4-	1.8-	891125 403	0.7+	0.1-	891228 888	1.0-	0.9+
781004 095	1.1-	0.0	891127 877	1.6+	0.8+	891230 888	0.3-	0.3-
841217 095	1.3-	1.2-	891127 877	0.2+	1.5+	891230 888	0.4-	0.6-
841223 095	(3.3-	1.0-)	891129 399	0.6+	1.8-	900101 888	0.8-	0.0
841227 095	2.1-	0.2-	891129 399	1.0+	0.4+	900101 888	1.6-	0.1+
891120 403	(0.6-	5.6+)Y	891201 403	0.0	0.3-	901121 801	0.8+	0.2-
891120 403	(0.9+	7.0+)Y	891201 403	0.2-	0.1+	901121 801	1.3+	0.2-
891121 403	2.5+	1.4-	891201 399	1.2+	0.4-	901217 801	0.2-	0.1-
891121 403	1.1+	0.2-	891201 399	2.0-	0.7+	901217 801	0.4-	0.2-
891124 877	(3.8+	0.6+)	891201 399	0.8-	0.2+	901220 801	0.3-	0.3-
891124 877	0.8+	1.4+	891205 403	0.3-	0.1+ Y	901220 801	0.2-	0.0

(4718)* 1990 VP3 = 1977 DM1 = 1977 GD = 1982 RP1 = 1986 VM3 = 1988 CC7

Discovered 1990 Nov. 13 by T. Fujii and K. Watanabe at Kitami.

Id. H. Kaneda, A. Lowe

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	355.74771	(1950.0)	P	Q	
n	0.27190618	Peri.	220.03621	-0.96635434	+0.24992332
a	2.3596993	Node	334.24314	-0.18524082	-0.84023988
e	0.1606790	Incl.	8.04395	-0.17845205	-0.48118112
P	3.62	H	12.8	G 0.15	

Residuals in seconds of arc

770218 381	0.7+	0.2+	820915 046	0.8+	0.2-	880213 054	0.1+	1.2-
770218 381	0.3+	0.0	820916 046	0.7-	2.1+	901113 400	0.2+	0.3+
770219 381	0.8-	0.5+	820916 046	0.9-	0.5+	901113 400	0.8-	2.5-
770219 381	0.6+	0.7+	861104 010	0.6+	0.7+	901115 400	0.3+	0.1-
770410 381	0.4+	0.1-	861104 010	1.9+	1.3+	901115 400	0.9-	0.1-
770410 381	0.1+	1.9+	861104 010	1.2+	0.5+	901215 400	0.3-	0.3+
820914 046	(6.6+	1.6-)	861105 010	(11.3-	1.2-)	901215 400	0.5-	1.0+
820914 046	(6.0+	0.9+)	861105 010	0.7+	0.2-	901220 400	0.2+	0.7+
820915 046	2.8-	1.3-	880213 054	0.1-	0.1-	901220 400	1.2-	1.4-

(4719)* 1990 WT2 = 1969 AC = 1972 XS = 1985 SY5 = 1987 EZ = 1989 RW4

Discovered 1990 Nov. 21 by S. Ueda and H. Kaneda at Kushiro.

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	68.95044	(1950.0)	P	Q	
n	0.22270188	Peri.	115.04305	-0.44466019	-0.89569395
a	2.6955877	Node	1.37030	+0.76778631	-0.38294329
e	0.1779625	Incl.	7.46520	+0.46128245	-0.22602385
P	4.43	H	12.0	G 0.15	

Residuals in seconds of arc

690115 095	0.8-	0.9+	870321 046	0.3-	0.2+	901124 399	0.8+	0.4-
721202 095	3.2-	3.9+	890909 095	0.7-	0.1+	901213 399	0.1-	1.9-
721206 095	2.2+	3.6+	890909 095	0.3-	1.0-	901213 399	1.0-	0.9-
850921 095	0.1+	2.0+	901121 399	0.4-	1.4-	901224 399	0.5-	0.7-
870304 688	1.3+	2.0+	901121 399	1.0-	1.1-	901224 399	0.6+	0.7+
870304 688	1.4+	1.7+	901121 399	0.7-	1.9-			
870321 046	1.3+	0.3-	901124 399	1.3-	0.9-			

(4720)* 1990 YG = 1940 XF = 1948 CD = 1973 SH5 = 1978 EU4 = 1982 JL4 = 1986 PY3 = 1988 EY2

Discovered 1990 Dec. 19 by S. Ueda and H. Kaneda at Kushiro.

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M 149.72035		(1950.0)	P	Q
n 0.29697830	Peri.	286.69709	+0.67020216	-0.73696716
a 2.2249465	Node	120.88639	+0.71393038	+0.60783996
e 0.1458066	Incl.	5.87199	+0.20281143	+0.29565181
P 3.32	H 12.9		G 0.15	

Residuals in seconds of arc

401204 062	0.8-	0.8+	860804 675	0.3-	0.1+	901219 399	0.3-	0.3+
401204 062	0.5+	1.0+	860804 675	0.3+	0.8+	901219 399	1.0-	1.4+
480214 008	(42.1-	35.7+)X	880221 400	0.7-	0.8-	901223 399	1.1+	0.7+
730927 095	0.6+	0.7+	880221 400	1.5+	1.1+	901223 399	0.8-	0.4-
780306 095	1.3-	1.1+	880221 400	0.7+	1.2-	910105 886	1.5-	0.8- Y
820515 095	1.9-	1.4+	880310 400	0.6+	0.4-	910105 886	(3.9-	0.5-)Y
860802 675	(8.3-	0.3+)	880310 400	1.4+	0.4-	910106 886	0.5-	1.8- Y
860802 675	(7.4-	1.3+)	880310 400	1.8+	1.6+	910106 886	0.6+	0.7- Y

(4721)* 4239 T-2 = 1983 RO8 = 1989 GH5

Discovered 1973 Sept. 29 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. S. Nakano (MPC 15086)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M 234.80252		(1950.0)	P	Q
n 0.29124663	Peri.	215.13485	-0.27499593	+0.96025176
a 2.2540426	Node	38.96601	-0.86370933	-0.22485148
e 0.1226161	Incl.	4.36785	-0.42235462	-0.16540369
P 3.38	H 13.5		G 0.15	

Residuals in seconds of arc

730919 675	(4.3+	1.9-)	731004 675	1.0-	0.7-	890429 675	0.0	1.8-
730919 675	(4.0+	1.5-)	731004 675	0.5-	0.3-	890429 675	0.8-	2.4-
730920 675	1.3+	0.9-	731005 675	0.8-	1.1-	890501 675	0.5+	1.2-
730924 675	0.3+	1.1+	731005 675	1.1-	0.9-	890501 675	(0.2+	3.0-)
730924 675	0.1+	0.6+	830911 095	0.5-	1.0+	901015 801	0.9+	0.5-
730925 675	0.5-	0.2+	890330 400	2.0-	1.1+	901015 801	0.9+	0.7-
730925 675	0.6+	0.3-	890330 400	1.7-	1.3+	901021 801	0.3+	0.7-
730929 675	(1.3+	3.3-)	890330 400	1.4+	1.7-	901021 801	0.3+	0.7-
730929 675	(1.3+	3.6-)	890406 675	(1.6-	3.0-)	901120 801	0.9-	0.7-
730930 675	1.6+	0.2-	890406 675	0.4-	1.6-	901120 801	0.2+	0.4-
730930 675	1.9+	1.3-	890408 675	(35.4+	57.9-)			

(4722)* 4271 T-3 = 1988 TZ2

Discovered 1977 Oct. 16 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Id. S. Nakano (MPC 14028)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	67.58209	(1950.0)	P	Q
n	0.08248412	Peri. 314.23342	+0.93995905	-0.31209296
a	5.2266386	Node 64.40012	+0.34014397	+0.82357778
e	0.1124384	Incl. 8.80928	+0.02791169	+0.47362181
P	11.95	H 10.3	G 0.15	

Residuals in seconds of arc

771007	675	0.9+	0.6-	881007	675	0.3+	0.7-	891007	809	0.0	0.7-
771011	675	1.0+	0.2+	881008	675	0.4-	0.2+	891007	809	0.4-	0.9-
771011	675	0.9+	0.1+	881009	675	1.9+	1.0-	891008	809	1.4+	0.5-
771012	675	0.2+	0.7-	881010	675	0.4+	0.3+	891008	809	1.2+	0.4+
771012	675	0.6-	0.6-	881108	675	1.2-	0.0	891008	809	0.9-	0.6+
771016	675	0.5+	0.7+	890926	809	0.8-	1.6-	901115	801	0.3-	0.1-
771016	675	0.3+	1.4+	890926	809	0.7-	1.3-	901115	801	0.3-	0.1-
771017	675	0.2-	0.2-	890926	809	1.6-	1.3-	901121	801	0.1+	0.2+
771017	675	1.1-	0.3+	890928	809	0.9+	1.8+	901121	801	0.0	0.3+
771021	675	0.6-	0.3+	890928	809	0.5+	2.3+	901214	801	0.1+	0.1-
771021	675	0.7-	1.0-	890928	809	0.4-	1.8+	901214	801	0.3+	0.1-
771022	675	0.6-	0.5-	891003	809	(0.1+	3.8+)	901215	801	0.3+	0.4-
771022	675	0.8-	2.2+	891003	809	(0.9-	3.8+)	901215	801	0.1+	0.3-
880914	675	0.0	0.1+	891003	809	(0.7-	3.9+)				
880914	675	0.8-	0.4+	891007	809	1.2+	1.5-				

1929 UG = 1990 QP8

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nagata

M	65.25791	(1950.0)	P	Q
n	0.25722680	Peri. 77.74514	+0.62297640	-0.78222912
a	2.4486417	Node 333.71959	+0.71387832	+0.57074231
e	0.1779036	Incl. 0.54917	+0.31980955	+0.24974151
P	3.83	H 14.0	G 0.25	

Residuals in seconds of arc

291026	690	0.6+	1.9-	900816	809	1.0+	0.7+	900818	809	0.5+	0.0
291027	690	0.2+	0.2+	900816	809	1.1-	0.3+	900818	809	0.1-	0.2-
291103	690	0.8-	1.7+	900816	809	1.1-	0.1-	900818	809	0.8+	0.7-

1938 DM1 = 1938 EW = 1989 EM2

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Oishi

M	242.94564	(1950.0)	P	Q
n	0.27138187	Peri. 220.22104	-0.78859130	+0.61490311
a	2.3627376	Node 357.71136	-0.53340695	-0.68746799
e	0.1048537	Incl. 6.08497	-0.30594245	-0.38637019
P	3.63	H 13.0	G 0.15	

Residuals in seconds of arc

380220	024	0.8-	0.1-	890326	400	2.9-	1.7+	890406	400	0.6-	0.2+
380223	024	0.2-	0.9-	890326	400	2.3-	1.9+	890406	400	0.9-	0.1-
380305	024	0.8+	0.6+	890327	400	0.7+	0.8+	890412	400	(4.3-	6.0-)
890312	400	1.7+	0.3-	890327	400	1.7+	1.3+	890412	400	(3.5-	6.5-)
890312	400	0.7+	1.4-	890406	400	1.7+	2.0-				
890312	400	0.6+	0.3+	890406	400	0.3-	2.2-				

1942 CG = 1982 YH5 = 1990 XO

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	75.02166	(1950.0)	P	Q
n	0.23986901	Peri. 357.90318	-0.09639843	-0.98272986
a	2.5653893	Node 97.60195	+0.91546847	-0.14982603
e	0.1615841	Incl. 9.16941	+0.39067228	+0.10860099
P	4.11	H 12.5	G 0.15	

Residuals in seconds of arc

420211	062	0.7-	0.4-	420313	062	1.2+	1.9-	901213	399	0.4-	0.2-
420217	062	1.9-	0.9+	821224	095	0.1+	1.0+	901213	399	0.1-	0.5-
420221	062	1.3+	0.1-	901213	399	0.3+	0.5-	901215	399	0.2+	0.0
420306	062	0.2+	0.8+	901213	399	0.1-	1.4-	901215	399	0.2+	2.0+

1948 AF = 1990 VF1

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nagata

M	21.75120	(1950.0)		P	Q
n	0.38685876	Peri.	85.43427	-0.86550275	+0.28211237
a	1.8653819	Node	110.49425	-0.39408006	-0.89357532
e	0.0826280	Incl.	26.22342	+0.30920204	-0.34919301
P	2.55	H	13.7	G 0.25	

Residuals in seconds of arc

480114	662	1.3+	1.1-	480122	662	1.2-	0.5+	901113	413	2.5+	0.1+
480114	662	1.8+	1.3-	480122	662	1.4-	0.8+	901125	413	1.1+	0.7-
480117	662	0.4-	0.6+	901112	413	0.8-	0.8-	901125	413	0.3-	0.5+
480117	662	0.0	0.2+	901112	413	0.1-	0.2+	901126	413	2.3-	0.9+

1971 TY2 = 1990 XA1

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden

M	77.33436	(1950.0)		P	Q
n	0.21200855	Peri.	181.27308	-0.19505515	-0.96870501
a	2.7854882	Node	279.99049	+0.90118735	-0.11524906
e	0.2309718	Incl.	8.96723	+0.38705922	-0.21983690
P	4.65	H	12.0	G 0.15	

Residuals in seconds of arc

711014	095	0.3-	1.3-	901214	675	0.7-	0.9-	901217	675	0.1+	0.9+
711020	095	0.2+	0.3-	901214	675	0.3-	1.0-				
711111	095	0.0	1.6+	901217	675	0.7+	0.8+				

1972 RY3 = 1976 GP2

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Lowe

M	41.40396	(1950.0)		P	Q
n	0.15583818	Peri.	301.32299	+0.89644559	+0.43443175
a	3.4199529	Node	33.16052	-0.33239362	+0.78972694
e	0.0461317	Incl.	9.20386	-0.29308666	+0.43312864
P	6.32	H	11.1	G 0.15	

Residuals in seconds of arc

720906	095	0.0	0.3+	760401	095	0.0	0.5-				
721007	095	0.0	0.4-	760404	095	0.0	0.4+				

1973 AW3 = 1981 YP = 1990 VS1

Id. A. Lowe (k), B. G. Marsden, R. Nagata

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden

M	353.61550	(1950.0)		P	Q
n	0.21246452	Peri.	84.55949	-0.85589263	-0.50259901
a	2.7815015	Node	65.21681	+0.40520501	-0.79811844
e	0.0699535	Incl.	7.71158	+0.32133582	-0.33226674
P	4.64	H	12.5	G 0.15	

Residuals in seconds of arc

730102	095	0.0	0.9-	811220	046	1.6+	0.4+	901112	877	0.2+	1.9+
730104	095	0.0	0.9+	901111	877	1.2-	0.9-	901112	877	1.8+	0.5-
811220	046	1.6-	0.4-	901111	877	0.8-	0.5-				

1973 QO1 = 1990 RT4
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden
M 105.51923 (1950.0) P Q
n 0.23228071 Peri. 35.10060 +0.98764652 +0.12633893
a 2.6209666 Node 317.34019 -0.15563297 +0.85974539
e 0.2941365 Incl. 7.86236 +0.01824094 +0.49484982
P 4.24 H 13.5 G 0.15
Residuals in seconds of arc
730829 095 1.1- 0.6+ 900915 675 0.4- 0.5- 900918 675 0.3+ 1.3+
730902 095 0.8+ 0.8- 900915 675 0.0 0.1-
730927 095 1.4+ 1.7- 900918 675 0.9- 1.1+

1975 BP1 = 1975 EZ = 1978 QR2 = 1979 WL4 = 1989 RC5 = 1990 XG
Id. T. Urata (d, NOC 1395), T. Furuta (k), K. Ichikawa
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Ichikawa
M 53.60652 (1950.0) P Q
n 0.17946287 Peri. 311.23893 -0.20074946 -0.97947355
a 3.1128188 Node 150.32715 +0.90940183 -0.19323135
e 0.1663559 Incl. 2.10687 +0.36426359 -0.05738657
P 5.49 H 12.0 G 0.15
Residuals in seconds of arc
750116 330 0.5- 1.2+ 780831 095 0.2- 0.3+ 901210 403 1.4+ 1.0+ Y
750122 330(10.6- 1.6-) 791117 095 0.0 2.0+ 901212 403 0.7- 0.3-
750212 330 0.5+ 1.4- 890909 095 0.4+ 0.9- 901212 403 0.6- 0.6-
750306 095 0.6+ 0.4- 890909 095 (6.2+ 3.6+)
750308 095 0.8- 0.3+ 901210 403 0.1- 1.9- Y

1975 SE2 = 1990 SC7
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nagata
M 108.11350 (1950.0) P Q
n 0.26148416 Peri. 333.71577 +0.96930860 -0.23352404
a 2.4219906 Node 40.03247 +0.24131651 +0.84401152
e 0.1368553 Incl. 6.86274 +0.04698056 +0.48281578
P 3.77 H 15.3 G 0.25
Residuals in seconds of arc
750930 675 0.3- 0.1- 751016 675 0.1- 0.1- 900925 809 1.4+ 0.4+
751001 675 2.6- 2.5+ 900922 809 1.0- 0.6- 900925 809 1.3+ 0.1+
751002 675 2.1+ 1.3- 900922 809 0.6- 0.4- 900925 809 0.9+ 0.4+
751015 675 0.6+ 0.5- 900922 809 1.9- 0.5-

1975 XH = 1979 YK7 = 1980 BM3
Id. S. Nakano (MPC 12199)
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano
M 40.04484 (1950.0) P Q
n 0.26236690 Peri. 40.80152 -0.69090757 -0.69802318
a 2.4165550 Node 93.83509 +0.60451277 -0.70056832
e 0.2090747 Incl. 10.87102 +0.39649849 -0.14821494
P 3.76 H 14.1 G 0.15
Residuals in seconds of arc
751201 805 1.7- 0.8+ 800122 095 0.6+ 1.1- 901121 801 0.4+ 0.3+
751204 805 0.2+ 0.6+ 880418 801 1.0+ 2.3+ 901121 801 0.3+ 0.5+
751205 805 0.4+ 0.2+ 901020 413 0.9- 0.1+
791218 095 0.1+ 0.1- 901020 413 0.4- 0.3+

1976 GL8 = 1976 HR = 1990 XD
Id. O. Kippes (d, MPC 5217), T. Urata

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Urata

M	245.25179	(1950.0)	P	Q
n	0.24044305	Peri. 355.07345	-0.05247046	+0.99210119
a	2.5613097	Node 271.88672	-0.91223379	-0.09403907
e	0.1551551	Incl. 6.54599	-0.40629591	+0.08301737
P	4.10	H 12.0	G 0.15	

Residuals in seconds of arc

760405	808	0.0 0.2-	760423	808	0.7- 0.5+	901207	889	0.2- 0.6-
760405	808	0.1+ 0.1-	760426	808	0.4- 0.7+	901207	889	0.0 0.2-
760423	808	0.2+ 0.7-	760426	808	0.8+ 0.3-	901208	889	0.2+ 0.8+

1976 UP18 = 1983 UK1 = 1990 UF4

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	117.55759	(1950.0)	P	Q
n	0.28288802	Peri. 214.26716	+0.79312177	-0.60902960
a	2.2982275	Node 183.27361	+0.58084092	+0.75948475
e	0.1845227	Incl. 6.42250	+0.18325305	+0.22861729
P	3.48	H 15.3	G 0.15	

Residuals in seconds of arc

761022	381	0.2- 0.1+	761024	381	0.6+ 1.2-	901016	809	0.2- 1.3+
761022	381	0.3+ 0.6+	831030	675	0.2- 0.7-	901020	809	0.3+ 0.6-
761024	381	0.6- 0.3+	831104	675	0.0 0.9+	901020	809	0.1- 0.7-

1976 YA = 1976 YD4 = 1990 WM2

Id. O. Kippes (d, MPC 5517), G. V. Williams

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams

M	75.80266	(1950.0)	P	Q
n	0.21255277	Peri. 195.69206	+0.24040211	-0.94250089
a	2.7807260	Node 240.89854	+0.91668107	+0.29909767
e	0.1924688	Incl. 15.40878	+0.31922193	-0.14910621
P	4.64	H 12.5	G 0.15	

Residuals in seconds of arc

761216	801	1.4+ 0.8+	901116	881	0.6- 1.8- Y	901205	881	0.7- 0.7+
761218	095	0.7- 0.3+	901116	881	1.8+ 0.2- Y	901205	881	0.3- 0.7+
761220	095	0.8- 1.7-	901117	881	0.5- 0.5+	901207	877	0.0 0.7-
901112	675	0.3+ 0.7-	901117	881	0.1+ 1.3+	901207	877	0.2+ 0.8-
901114	675	0.5+ 0.5-	901122	877	1.0- 0.3+			
901114	675	0.1- 0.2+	901122	877	0.4+ 1.5+			

1978 RR8 = 1990 TQ4

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nagata

M	40.64089	(1950.0)	P	Q
n	0.25871349	Peri. 324.44578	-0.62456654	-0.77916586
a	2.4392520	Node 163.98508	+0.75361369	-0.61912507
e	0.2353350	Incl. 11.09214	+0.20489762	-0.09790156
P	3.81	H 13.5	G 0.25	

Residuals in seconds of arc

780902	809	0.2- 0.1-	780906	809	0.9+ 0.1-	901009	413	0.3- 0.5-
780902	809	0.2- 0.0	780910	809	0.1- 2.0+	901009	413	0.2- 1.1+
780902	809	1.2- 0.5-	780910	809	0.8+ 1.4-	901020	413	1.4- 1.3-
780902	809	0.4+ 0.6+	780910	809	1.7+ 0.4+	901020	413	0.9+ 0.3+
780902	809	1.3- 0.1-	780910	809	1.5+ 0.2-			

1978 SE5 = 1986 RO10 = 1990 TK5

Id. H. Kaneda, R. Nagata

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M 110.45333		(1950.0)	P	Q
n 0.24125953	Peri.	143.40103	+0.97192143	+0.22678736
a 2.5555227	Node	203.72333	-0.23530458	+0.93593259
e 0.0594228	Incl.	8.97154	-0.00070617	+0.26943956
P 4.09	H 13.0	G 0.15		

Residuals in seconds of arc

780927	095	0.9-	2.5+	900916	675	1.2-	0.7+	901009	413	0.5+	0.2-
781003	095	0.5+	1.6-	900916	675	0.4-	0.4-	901009	413	0.4+	1.3+
781007	095	0.4+	0.7-	900919	675	1.2+	0.0	901011	413	0.7-	0.1-
860908	095	0.3+	0.6-	900919	675	0.0	0.7-				

1978 XQ = 1973 YK3 = 1986 EG2

Id. S. Nakano (MPC 12131; unpublished)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M 21.15695		(1950.0)	P	Q
n 0.17364447	Peri.	331.10655	-0.91486852	-0.40374932
a 3.1819651	Node	185.08132	+0.37346842	-0.84488993
e 0.1321964	Incl.	0.93032	+0.15341748	-0.35092376
P 5.68	H 12.0	G 0.15		

Residuals in seconds of arc

731225	095	0.3-	1.8-	860306	688	0.9+	2.3-	860315	809	0.4+	0.2+
781203	675	0.1-	0.2-	860306	688	1.8+	2.2-	860315	809	0.0	0.6+
781203	675	0.5-	0.0	860308	809	0.8-	0.6+	901225	896	0.2-	1.2+
781205	675	1.5+	1.0+	860308	809	0.9-	0.5+	901225	896	0.5+	1.2+
781206	675	0.0	0.7-	860309	809	0.8-	0.7+				
781206	675	0.8-	0.7-	860309	809	0.8-	1.5+				

1979 MP3 = 1978 FC

Id. C. Atallah, C. S. Shoemaker (1990 obs.)

Epoch 1991 Dec.10.0 ET = JDE 2448600.5 Bowell

M 128.20479		(1950.0)	P	Q
n 0.28696457	Peri.	182.60900	+0.71266566	-0.70064868
a 2.2764103	Node	221.94212	+0.64452026	+0.67346518
e 0.1492965	Incl.	2.96975	+0.27694999	+0.23566093
P 3.43	H 15.2	G 0.15		

Residuals in seconds of arc

780330	675	0.2+	0.6+	790724	675	1.6+	0.5+	901112	675	0.4-	0.2+
790623	413	(7.2-	0.2-)	790724	413	0.6+	0.4-	901112	675	0.4+	0.5+
790624	413	0.6-	0.2+	790725	675	1.3-	0.7+	901114	675	0.0	0.4-
790625	413	0.2-	0.9+	790727	675	1.4+	0.2-	901114	675	0.0	0.6+
790629	413	0.3+	0.2-	790823	675	2.3-	0.6-				

1979 QP = 1990 TJ12

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nagata

M 249.29605		(1950.0)	P	Q
n 0.19840565	Peri.	302.04172	-0.41656213	+0.90895904
a 2.9113875	Node	303.33193	-0.82728236	-0.38649380
e 0.0332113	Incl.	1.12575	-0.37693485	-0.15625623
P 4.97	H 12.7	G 0.25		

Residuals in seconds of arc

790822	809	1.3-	0.6-	790826	809	0.2-	0.4-	901015	033	0.1-	0.5-
790822	809	1.9+	1.0+	790826	809	0.6-	0.1-	901015	033	0.4-	0.1+
790822	809	0.3-	0.1+	790830	809	0.1-	0.4+	901018	033	0.4+	0.4-
790823	809	0.2-	0.6-	790830	809	0.1-	0.4+	901018	033	0.3-	0.9+
790823	809	1.1+	0.1-	901014	033	0.2+	0.2-				

1979 QX9 = 1977 EN7 = 1990 RA1
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M 99.36725	(1950.0)	P	Q	
n 0.17732624	Peri. 118.89290	+0.80225659	+0.59687902	
a 3.1377671	Node 204.46540	-0.55648611	+0.74107602	
e 0.1814783	Incl. 1.51446	-0.21611936	+0.30747647	
P 5.56	H 12.6	G 0.15		

Residuals in seconds of arc

770312 381 0.9- 0.6+	770315 381 2.3- 0.1-	900914 675 0.2+ 0.8-
770312 381 0.1- 1.7-	790827 095 1.6- 0.5+	900920 675 0.1+ 0.1+
770314 381 0.0 0.2-	790902 095 0.4- 1.0+	900920 675 0.6+ 1.5-
770314 381 1.8+ 1.4-	790924 095 1.8+ 1.2-	
770315 381 0.1+ 0.4-	900914 675 0.2+ 0.7-	

1980 DX = 1980 BA3 = 1990 RR
Id. S. Nakano (d, MPC 13674), E. Bowell, H. Kaneda
Epoch 1991 Dec.10.0 ET = JDE 2448600.5 Bowell

M 142.71046	(1950.0)	P	Q	
n 0.23325436	Peri. 144.28802	+0.49891968	+0.86368706	
a 2.6136627	Node 155.40153	-0.82968217	+0.49987208	
e 0.0908306	Incl. 9.90199	-0.25041294	+0.06459537	
P 4.23	H 12.8	G 0.15		

Residuals in seconds of arc

800124 095 0.1+ 0.3-	800222 046 1.1+ 0.5+	900913 675 0.8- 0.3-
800219 046 (2.1- 1.6+)	800222 046 1.5- 1.0+	900918 675 1.2+ 0.2+
800219 046 0.4- 1.6+	800223 046 (3.3+ 0.7-)	900918 675 0.3+ 0.4+
800221 046 0.1+ 1.3-	800223 046 0.2+ 1.3-	
800221 046 0.4+ 0.3-	900913 675 0.8- 0.2-	

1980 LE1 = 1984 JW = 1990 VQ3
Id. E. Bowell, T. Nomura
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M 292.90790	(1950.0)	P	Q	
n 0.23271727	Peri. 334.90412	-0.80805118	+0.55749845	
a 2.6176826	Node 240.30939	-0.49671768	-0.81851883	
e 0.1217277	Incl. 12.65997	-0.31674095	-0.13864488	
P 4.24	H 12.4	G 0.15		

Residuals in seconds of arc

800610 675 0.4- 2.6+	800620 675 0.4- 0.6-	901111 374 0.8+ 1.3+
800611 675 1.9- 0.1+	800709 675(39.2- 14.6+)	901115 374 0.4+ 0.4+
800612 675 (6.2+ 3.2-)	840503 688 0.4+ 0.2+	901115 374 1.6- 1.9-
800618 675 2.3+ 0.0	840503 688 0.5- 1.0-	901121 399 0.7- 1.5-
800619 675 0.4+ 2.4-	901111 374 (3.8- 0.4-)	901121 399 1.1+ 0.6+

1981 EK10 = 1990 VW7
Id. C. S. Shoemaker
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell

M 59.32708	(1950.0)	P	Q	
n 0.27670331	Peri. 158.36168	-0.29904474	-0.95335346	
a 2.3323469	Node 309.01448	+0.86750992	-0.25367030	
e 0.1446050	Incl. 3.03236	+0.39749060	-0.16361100	
P 3.56	H 15.0	G 0.15		

Residuals in seconds of arc

810209 413 1.6+ 1.5-	810307 413 0.2+ 0.5+	810405 413 0.7- 0.9+
810212 413 0.3- 0.4+	810307 413 0.1+ 1.0+	810406 413 0.2+ 0.7+
810213 413 1.1+ 0.6+	810311 413 1.1- 0.7+	810407 413 1.2- 0.2+
810301 413 1.6- 0.4+	810311 413 0.5+ 0.2-	810407 413 0.8+ 0.5-
810301 413 1.9+ 0.2-	810315 413 1.5- 0.2+	810410 413 1.3+ 0.7-

810412	413	0.4+	0.7-	810503	413	1.1-	0.7-	901113	675	0.2+	0.7+
810430	413	0.1-	1.2-	901111	675	0.7+	0.3-	901113	675	0.3-	1.2-
810502	413	0.8-	1.9-	901111	675	0.1-	0.6-				

1981 EY10 = 1990 SV10

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	99.24180	(1950.0)		P	Q
n	0.26195722	Peri.	170.80408	+0.93785525	-0.34601066
a	2.4190739	Node	209.48259	+0.31484857	+0.88055837
e	0.1068802	Incl.	3.09076	+0.14593806	+0.32387278
P	3.76	H	14.7	G 0.15	

Residuals in seconds of arc

810212	413	0.7+	0.3+	810315	413	0.6-	0.0	900916	675	0.2+	0.9+
810213	413	0.6+	0.3-	810405	413	0.9-	0.5-	900918	675	0.3-	1.4-
810301	413	1.4-	0.2-	810405	413	0.4-	1.6+	900918	675	1.3+	1.5-
810307	413	1.3-	0.2-	810406	413	0.3+	0.3+	900919	675	0.0	0.7+
810311	413	0.6-	1.2+	810406	413	2.5+	1.3-	900919	675	1.0-	0.9+
810311	413	1.4+	0.8-	810426	413	2.3+	0.7-				
810315	413	1.0-	0.0	810502	413	1.7-	0.3+				

1981 EF26 = 1990 UF5

Id. R. H. McNaught (1983 obs.), S. Nakano

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	348.33788	(1950.0)		P	Q
n	0.17092895	Peri.	319.32629	-0.69132045	-0.72245085
a	3.2155774	Node	174.37122	+0.69030589	-0.66523347
e	0.1010997	Incl.	6.94860	+0.21343337	-0.18849190
P	5.77	H	11.9	G 0.15	

Residuals in seconds of arc

810209	413	0.7+	1.1+	810315	413	1.4-	0.2-	810410	413	1.4+	0.7-
810212	413	0.3+	0.0	810315	413	0.1+	0.7-	810426	413	1.8+	0.9-
810213	413	1.0+	0.1-	810405	413	0.3+	0.6+	810501	413	0.7+	0.0
810302	413	1.6-	0.0	810405	413	(2.9+	1.3-)	831008	413	0.2+	1.1-
810302	413	0.6-	1.0-	810406	413	0.8-	0.3+	901016	809	0.1+	0.1-
810306	413	1.2-	0.2+	810406	413	0.1+	0.3-	901016	809	0.3-	0.1+
810306	413	0.8+	0.4-	810407	413	1.1-	1.0+	901016	809	0.1-	0.3+
810311	413	0.8-	0.0	810407	413	1.5+	0.8-	901019	809	0.4+	1.0-
810311	413	0.3-	0.4-	810410	413	0.6-	1.1+				

1981 EW45 = 6067 P-L

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	114.72124	(1950.0)		P	Q
n	0.16871644	Peri.	167.05257	+0.98454776	-0.17220675
a	3.2436286	Node	202.93720	+0.15250911	+0.93241311
e	0.1065789	Incl.	4.67874	+0.08606209	+0.31772727
P	5.84	H	13.7	G 0.15	

Residuals in seconds of arc

600924	675	0.5-	0.4-	601022	675	0.1+	0.2-	810301	413	1.7-	0.4-
600925	675	0.5+	0.1-	601024	675	0.8+	0.8+	810308	413	1.8+	0.9-
600926	675	0.3-	0.3-	601026	675	0.6+	0.9+	810312	413	0.5+	1.0+
600928	675	0.6-	0.9-	781028	675	0.6-	0.7-	810501	413	1.0-	1.1-
601017	675	0.1-	0.5-	781029	675	0.7+	0.4+				

1981 UD2 = 1990 WR3
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden

M	113.68029	(1950.0)	P	Q
n	0.22334763	Peri. 163.61206	+0.83391184	-0.52720415
a	2.6903948	Node 229.36124	+0.47911148	+0.83835370
e	0.1525418	Incl. 12.42248	+0.27394020	+0.13863210
P	4.41	H 13.0	G 0.15	

Residuals in seconds of arc

811022 095	0.2-	0.7+	811124 095	0.7+	0.6+	901122 809	0.7-	0.5-
811024 095	0.8+	0.0	901121 809	0.7-	0.3+	901122 809	0.1-	0.3-
811030 381	0.9-	0.3-	901121 809	0.5+	0.2+	901122 809	0.5+	0.3-
811030 381	0.4-	0.9-	901121 809	0.5+	0.6+			

1982 EF = 1982 FH2 = 1987 MD1 = 1990 BK1
Id. B. G. Marsden (d, MPC 6939), H. Kaneda
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	93.21642	(1950.0)	P	Q
n	0.23418543	Peri. 25.48732	-0.95465190	+0.29553757
a	2.6067305	Node 171.46248	-0.29733823	-0.94025273
e	0.0875105	Incl. 14.04095	-0.01515657	-0.16906314
P	4.21	H 12.5	G 0.15	

Residuals in seconds of arc

820315 046	1.9+	1.1+	820324 046	1.8-	1.0-	900121 675	0.7+	0.9-
820315 046	0.1+	0.8-	820325 046	(2.3+	4.6-)	900121 675	0.7+	0.4-
820323 046	1.9+	0.8-	820325 046	2.1-	0.5-	900125 675	1.1-	0.4-
820323 046	(3.5-	4.5+)	870628 675	0.1+	0.1-	900125 675	0.4-	1.6+
820324 046	0.8+	1.9+	870630 675	(12.8-	13.6-)			

1982 FF3 = 1987 WV3 = 1990 RW1
Id. E. Bowell (k), B. G. Marsden
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Marsden

M	79.86173	(1950.0)	P	Q
n	0.29893036	Peri. 151.26297	+0.38636164	-0.92190695
a	2.2152498	Node 275.99653	+0.84061915	+0.36467488
e	0.1198783	Incl. 1.64215	+0.37958416	+0.13076625
P	3.30	H 14.0	G 0.15	

Residuals in seconds of arc

820321 809	0.3-	2.0-	820327 809	1.8-	1.2+	820331 809	0.8-	0.5+
820321 809	0.0	2.1-	820328 809	0.9+	0.2-	820331 809	0.9-	0.2+
820321 809	0.2+	2.1-	820328 809	1.0+	0.3-	820401 809	0.4-	0.0
820324 809	0.2+	1.6-	820328 809	1.4+	0.3-	820401 809	0.6-	0.1-
820324 809	0.2+	1.2-	820330 809	1.4+	0.5+	820401 809	0.4-	0.1-
820324 809	0.3+	0.7-	820330 809	1.7+	1.0+	871124 688	0.4+	0.6+
820326 809	0.1+	0.5+	820330 809	2.7+	0.7+	871124 688	0.4-	0.3-
820326 809	0.3+	0.1+	820331 809	0.7-	0.2+	900915 675	0.2+	1.5-
820326 809	0.4+	0.3-	820331 809	0.6-	0.2+	900917 675	0.5+	1.0-
820327 809	2.7-	0.7+	820331 809	0.3-	0.1-	900917 675	0.9+	1.5-
820327 809	2.2-	0.9+	820331 809	0.9-	0.3+			

1983 RD2 = 1972 TA7 = 1985 DB3 = 1987 UQ9 = 1987 WL1 = 1990 HR2
Id. H. Kaneda, S. Nakano (d)
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	41.00368	(1950.0)	P	Q
n	0.26505341	Peri. 138.55477	+0.73990203	-0.67254642
a	2.4001982	Node 263.71574	+0.61311915	+0.68338767
e	0.1185308	Incl. 0.86715	+0.27682106	+0.28401163
P	3.72	H 12.9	G 0.15	

Residuals in seconds of arc

721006	095	1.1-	3.5+		830914	688	0.1-	2.3-		871028	095	0.8+	1.5-
830903	095	0.9+	1.3-		850224	675	(9.3-	1.0-)		871122	688	1.6-	0.7+
830910	095	1.6+	1.9+		850224	675	(9.2-	1.8-)		871122	688	0.9+	0.7+
830913	095	0.8-	0.4+		850227	675	0.3+	1.0+		900427	413	0.5-	1.1+
830914	688	0.8-	1.1-		850227	675	(4.3+	0.9-)		900430	413	0.1-	2.2+

1984 EC = 1986 TQ17 = 1990 RU1
Id. E. Bowell (k), B. G. Marsden
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Marsden

M	228.47085	(1950.0)	P	Q	
n	0.22580479	Peri.	230.08371	-0.73598376	+0.67639444
a	2.6708364	Node	352.32428	-0.53717578	-0.60917529
e	0.1285632	Incl.	12.36808	-0.41203165	-0.41400003
P	4.36	H	12.5	G 0.15	

Residuals in seconds of arc

840301	688	1.4-	0.4-		840331	688	2.2-	0.8-		900917	675	2.0+	2.2-
840301	688	1.1-	1.1+		840331	688	3.2+	0.9-		900917	675	0.4+	0.9-
840306	688	0.6-	1.6+		861011	095	0.5-	0.9+		900919	675	0.9-	1.0+
840306	688	1.9-	1.1+		900915	675	1.0+	0.7-		900919	675	0.3+	0.1+
840309	688	0.4+	0.8-		900916	675	0.4-	0.6+					
840309	688	2.8+	2.3-		900916	675	1.1-	0.1+					

1984 QJ = 1982 HY2 = 1990 RE1
Id. H. Kaneda, R. Nagata
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	55.38352	(1950.0)	P	Q	
n	0.17058648	Peri.	256.00371	+0.92840074	-0.36999016
a	3.2198797	Node	125.70047	+0.35514302	+0.85634948
e	0.1696201	Incl.	2.42368	+0.10929548	+0.36023999
P	5.78	H	12.2	G 0.15	

Residuals in seconds of arc

820427	033	0.3+	0.7+		840822	046	(4.8+	1.1+)		900914	675	0.3-	0.9+
820427	033	0.3-	0.6-		840823	046	0.2-	0.2+		900914	675	0.0	0.2+
840821	046	0.9+	0.7+		840823	046	(3.9-	1.6-)		900920	675	0.3+	0.2-
840821	046	0.1+	0.1+		840901	046	0.4-	0.8-		900920	675	0.1-	0.7-
840822	046	0.3-	0.4-		840901	046	(3.1-	0.1-)					

1984 SR5 = 1990 RO4
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden

M	77.45678	(1950.0)	P	Q	
n	0.16941373	Peri.	340.09853	+0.99832282	+0.05059673
a	3.2347286	Node	17.07413	-0.03090202	+0.87667691
e	0.1173175	Incl.	5.49862	-0.04895529	+0.47841151
P	5.82	H	12.5	G 0.15	

Residuals in seconds of arc

840921	809	0.6-	1.0+		840924	809	0.5-	0.0		840929	809	0.1+	0.6+
840921	809	0.5-	0.9+		840924	809	0.3-	0.3-		840929	809	0.3-	0.6+
840921	809	0.3-	0.8+		840924	809	0.2-	0.4-		840929	809	0.6-	0.6+
840922	809	1.3+	0.3-		840926	809	0.9-	0.7+		840930	809	0.6+	0.2-
840922	809	1.3+	0.4-		840926	809	0.9-	0.6+		840930	809	0.9+	0.4-
840922	809	1.4+	0.4-		840926	809	0.6-	0.5+		840930	809	0.9+	0.5-
840922	809	0.2+	0.3-		840927	809	1.2-	1.4+		841001	809	0.9+	0.3-
840922	809	0.3+	0.7-		840927	809	1.0-	1.1+		841001	809	0.3+	0.3-
840922	809	0.4+	1.3-		840927	809	1.0-	1.0+		900914	675	0.1-	0.2+
840923	809	0.2-	0.2-		840928	809	0.3+	1.0-		900914	675	0.8-	0.3-
840923	809	0.0	0.3-		840928	809	0.3+	1.0-		900918	675	0.6+	0.7+
840923	809	0.1+	0.2-		840928	809	0.0	1.1-		900918	675	0.2+	0.6-

1985 JK = 1990 WZ4
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden

M	287.12184	(1950.0)	P	Q
n	0.27378073	Peri. 136.53820	-0.42669606	+0.89964025
a	2.3489205	Node 108.00657	-0.85410007	-0.36717319
e	0.1188745	Incl. 5.58871	-0.29739458	-0.23628642
P	3.60	H 14.0	G 0.15	

Residuals in seconds of arc

850515	688	0.8- 0.3+	850518	688	0.5- 0.3-	901116	809	0.2- 0.4+
850515	688	1.1+ 0.2-	850521	688	0.2+ 0.1+	901117	809	0.2+ 0.4-

1985 TS1 = 1990 SR10
Id. H. E. Holt
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell

M	10.85370	(1950.0)	P	Q
n	0.19274713	Peri. 157.31737	+0.24429915	-0.95918814
a	2.9680925	Node 278.30742	+0.86610090	+0.28187390
e	0.0011039	Incl. 8.27381	+0.43610452	-0.02247715
P	5.11	H 12.2	G 0.15	

Residuals in seconds of arc

850919	095	0.0 1.1+	900917	675	0.0 0.1-	900920	675	1.3- 0.7-
851015	688	0.2- 1.9-	900917	675	2.4+ 0.5-	900920	675	1.9- 0.1+
851015	688	0.9- 1.5-	900918	675	0.5- 0.0			
851018	095	1.5+ 2.8+	900918	675	0.8+ 0.7+			

1985 TV2 = 1964 WE = 1978 TT9 = 1981 RY = 1989 VB2
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	129.96427	(1950.0)	P	Q
n	0.27629584	Peri. 306.70788	-0.92245194	-0.37828884
a	2.3346394	Node 211.27849	+0.38437819	-0.88074571
e	0.0997090	Incl. 8.56560	+0.03654885	-0.28492904
P	3.57	H 12.6	G 0.15	

Residuals in seconds of arc

641129	760	0.5+ 2.4-	810902	033	0.4+ 0.4-	851011	010	0.4+ 1.2+
641129	760	0.0 2.6-	850915	095	0.3- 2.1+	851011	010	0.8+ 2.1-
781004	095	1.8- 1.6+	850920	095	0.3+ 0.3+	891107	095	0.6+ 0.3+
810902	033	0.2- 1.1-	850922	095	0.2+ 0.7-	891124	095	0.7- 3.1+

1986 JS = 1933 FV1 = 1982 BA10
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nagata

M	214.31355	(1950.0)	P	Q
n	0.29807442	Peri. 141.30240	-0.00640272	+0.99613954
a	2.2194886	Node 128.15560	-0.94288933	+0.02314530
e	0.1547585	Incl. 6.39253	-0.33304462	-0.08467772
P	3.31	H 13.1	G 0.15	

Residuals in seconds of arc

330328	024	0.3+ 0.9+	860402	413	1.3- 1.8-	860503	675	2.6+ 0.7+
820119	095	0.1- 0.6-	860502	675	0.4+ 1.4+	860606	675	0.7- 0.5-
860402	413	1.2- 0.3-	860502	675	2.1+ 0.5+	860608	675	3.2- 1.2-

1986 PE = 1989 LR = 1990 WV2
Id. C. M. Bardwell (MPC 14786), G. V. Williams
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams

M	179.32873	(1950.0)	P	Q
n	0.28406798	Peri. 87.21541	+0.93281792	+0.33047229
a	2.2918588	Node 253.45521	-0.36028179	+0.86296878
e	0.0857034	Incl. 8.61922	+0.00691131	+0.38219491
P	3.47	H 13.0	G 0.15	

Residuals in seconds of arc

860804 675	0.6-	0.5+	890605 675	0.9-	1.8+	901118 675	1.0-	1.2-
860804 675	1.0-	2.0+	890605 675	0.4-	0.7+	901118 675	0.4-	1.1-
860806 675	(2.7+	4.7+)	890629 675	0.2+	0.8-	901122 385	(59.8+	30.0-)
860814 095	1.5+	2.1-	890629 675	0.5-	1.1-	901123 889	0.2+	1.9-
860908 095	(0.6+	4.0-)	890701 675	1.5+	0.4-	901123 889	0.1-	1.3+
860929 010	(22.3+	2.7+)	890701 675	0.4-	0.7-	901215 675	0.1-	0.0
860929 010	(20.8+	3.1+)	901111 675	2.1+	1.6+	901215 675	0.2-	2.0+
890603 675	0.5+	0.5+	901111 675	0.7+	0.6+	901218 675	0.8-	0.4-
890603 675	(0.4+	2.9+)	901112 675	(3.6+	3.5+)	901218 675	0.4-	0.1-

1986 QQ = 1938 SC = 1976 SH5 = 1988 JX1 = 1990 XC
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nagata

M	98.71898	(1950.0)	P	Q	
n	0.28623325	Peri.	84.87267	+0.11506890	-0.99335560
a	2.2802860	Node	358.51550	+0.87888792	+0.10272428
e	0.1492085	Incl.	4.32009	+0.46294187	+0.05188816
P	3.44	H	13.4	G 0.15	

Residuals in seconds of arc

380917 024	(31.4+	51.3+)X	860902 809	0.2+	0.6+	860908 809	0.1+	0.2-
760924 095	0.1-	0.2+	860902 809	0.1-	0.7+	860908 809	0.3-	0.2+
860826 809	0.7+	1.3-	860902 809	0.1+	0.5+	860908 809	0.3-	0.1+
860826 809	1.0+	1.2-	860903 809	0.5-	0.3+	860908 809	0.4-	0.3+
860826 809	1.3+	1.2-	860903 809	0.3-	0.2+	860911 809	0.0	0.4+
860827 809	1.0+	1.1-	860903 809	0.4-	0.3+	860911 809	0.1+	0.5+
860827 809	1.0+	1.1-	860903 809	0.8-	0.1+	860911 809	0.2+	0.6+
860827 809	1.6+	1.1-	860903 809	0.6-	0.0	860911 809	0.6-	0.7+
860828 809	0.6+	1.2-	860903 809	0.4-	0.1-	860911 809	0.6-	0.7+
860828 809	0.6+	1.1-	860904 809	0.0	0.4+	860911 809	0.6-	0.6+
860828 809	0.5+	1.2-	860904 809	0.2+	0.4+	860912 809	0.5-	0.9+
860829 809	0.0	0.6-	860904 809	0.6+	0.3+	860912 809	0.5-	0.8+
860829 809	0.1+	0.6-	860904 809	0.1-	0.2+	860912 809	0.6-	0.7+
860829 809	0.2+	0.8-	860904 809	0.0	0.0	880511 413	0.0	0.6-
860831 809	0.3-	0.3+	860904 809	0.1-	0.0	880511 413	0.2-	0.1+
860831 809	0.2-	0.2+	860905 809	0.6+	0.4+	901208 875	0.8+	0.1-
860831 809	0.3-	0.1+	860905 809	0.6+	0.2+	901208 875	1.9-	0.2-
860901 809	0.2+	0.1+	860905 809	0.8+	0.4+	901210 875	0.7+	0.1-
860901 809	0.3+	0.0	860906 809	0.2-	0.5+	901210 875	0.0	0.4+
860901 809	0.5+	0.0	860906 809	0.2-	0.3+	901216 875	0.5+	0.2+
860902 809	0.4-	0.0	860906 809	0.3-	0.2+	901216 875	0.1-	0.1-
860902 809	0.3-	0.0	860908 809	0.2-	0.1+	901221 875	0.5+	0.5-
860902 809	0.2-	0.1-	860908 809	0.1-	0.0	901221 875	0.3+	0.4-

1986 TM1 = 1982 UL10 = 1990 SQ10
Id. H. E. Holt, R. H. McNaught, B. G. Marsden
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Marsden

M	62.33046	(1950.0)	P	Q	
n	0.23548566	Peri.	189.89706	+0.55906652	-0.81623809
a	2.5971263	Node	226.28748	+0.77378016	+0.57672484
e	0.1560114	Incl.	11.62103	+0.29784039	+0.03382061
P	4.19	H	12.5	G 0.15	

Residuals in seconds of arc

821023 095	0.3+	0.0	861105 688	1.9-	1.0+	900919 675	0.0	0.9+
861003 095	1.6-	4.2-	861204 688	2.0+	0.0	900919 675	0.1-	1.7+
861004 688	0.6+	0.3+	861204 688	1.8+	1.1+	900920 675	0.0	1.3-
861004 688	0.8-	0.6+	900917 675	0.5+	1.1+	900920 675	0.2-	0.6-
861007 095	0.5-	1.6-	900917 675	0.5-	1.3+	901012 413	0.0	0.2+
861011 095	1.7+	0.4-	900917 675	0.9-	2.4-	901012 413	1.1+	1.3+
861105 688	1.4-	1.5+	900917 675	0.1+	0.4-			

1986 UO = 1990 RS1

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Bowell
M 108.60436	(1950.0)	P		Q
n 0.23656257	Peri. 336.34044	+0.98870669		+0.14934342
a 2.5892384	Node 15.08656	-0.12870053		+0.88878677
e 0.2517860	Incl. 2.74716	-0.07678054		+0.43330660
P 4.17	H 14.2	G 0.15		

Residuals in seconds of arc

861007 095	0.7-	1.5+	861107 046	(4.1+	1.5-)	900914 675	0.3-	0.4-
861028 046	(2.0+	2.6-)	861107 046	1.2+	0.2-	900918 675	0.3+	0.0
861028 046	0.3-	1.1-	861109 046	0.3-	0.0	900918 675	0.5+	0.2+
861103 046	(2.6-	1.2-)	861109 046	0.0	0.2+			
861103 046	(2.6-	0.8-)	900914 675	0.3-	0.1-			

1986 UH3 = 1986 TF12 = 1990 RZ1

Id. B. G. Marsden (d), E. Bowell				
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Marsden
M 93.08867	(1950.0)	P		Q
n 0.23895434	Peri. 72.08357	+0.90824759		-0.41833586
a 2.5719317	Node 312.64493	+0.37909221		+0.83179225
e 0.2360192	Incl. 0.70291	+0.17713107		+0.36485170
P 4.12	H 14.5	G 0.15		

Residuals in seconds of arc

861004 095	0.1-	0.8+	861103 046	0.9-	0.2-	861109 046	0.6+	1.1+
861012 095	(0.3-	4.0+)	861107 046	2.8+	0.4+	861109 046	1.4-	0.9+
861028 046	1.0+	3.3-	861107 046	2.3+	0.6+	900915 675	0.3+	0.6+
861028 046	0.9+	3.2-	861109 046	1.1-	2.9+	900917 675	0.2-	0.1+
861103 046	1.8-	0.2-	861109 046	2.2-	0.2-	900917 675	0.3-	0.2-

1986 WO9 = 1990 RZ

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Lowe
M 346.99069	(1950.0)	P		Q
n 0.21405594	Peri. 269.16240	-0.22683019		-0.97383626
a 2.7676926	Node 193.97141	+0.91475159		-0.20815394
e 0.0233203	Incl. 3.28143	+0.33433156		-0.09118589
P 4.60	H 13.1	G 0.15		

Residuals in seconds of arc

861130 381	0.1+	0.2-	861201 381	0.1+	0.1-	900920 675	0.2+	0.4+
861130 381	0.2+	0.3+	900914 675	0.0	0.0	900920 675	0.1-	0.4-
861201 381	0.5-	0.0	900914 675	0.1-	0.1+			

1987 DE6 = 1979 ST12 = 1990 QE1

Id. B. G. Marsden (k), G. V. Williams				
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Williams
M 62.78626	(1950.0)	P		Q
n 0.17862721	Peri. 68.82102	+0.92459645		-0.37383205
a 3.1225133	Node 313.04892	+0.30159486		+0.83585392
e 0.1484458	Incl. 5.75572	+0.23272719		+0.40199232
P 5.52	H 12.0	G 0.15		

Residuals in seconds of arc

790928 095	0.7+	1.4-	870225 809	0.5-	0.7+	870302 809	1.3+	0.3-
870223 809	1.1-	0.4+	870226 809	0.5-	0.5+	870305 809	1.1+	0.5-
870223 809	0.8-	0.5+	870226 809	0.6-	0.5+	870305 809	1.2+	0.6-
870223 809	0.5-	0.9+	870226 809	0.6-	0.2+	870305 809	1.0+	0.2-
870224 809	0.7-	0.1+	870227 809	0.3-	0.3+	870306 809	0.7+	1.1-
870224 809	0.7-	0.5+	870227 809	0.3-	0.4+	870306 809	0.7+	0.9-
870224 809	0.6-	0.5+	870227 809	0.2-	0.4+	870306 809	0.7+	0.7-
870225 809	0.4-	0.4+	870302 809	1.0+	0.1-	870307 809	0.1-	0.8-
870225 809	0.4-	0.7+	870302 809	1.0+	0.3-	870307 809	0.2-	0.5-

870307 809 0.2+ 0.6- 900916 675 0.7+ 0.4+ 900920 675 0.4- 0.3+
900827 372 0.7- 0.3- 900916 675 0.8+ 0.2- 900920 675 0.2- 0.1+
900827 372 1.0- 0.2- 900919 675 0.0 0.3+
900828 372 0.6- 1.3+ 900919 675 0.3+ 0.1+

1987 SM13 = 1987 SL29 = 1971 TK1 = 1990 OV1
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda
M 83.70717 (1950.0) P Q
n 0.30721148 Peri. 341.42922 +0.72166145 -0.68651304
a 2.1752596 Node 62.26082 +0.64714252 +0.62345251
e 0.1297907 Incl. 5.76521 +0.24578714 +0.37417485
P 3.21 H 13.4 G 0.15
Residuals in seconds of arc
711011 095 0.2- 0.5+ 870924 095 (5.8- 0.4+) 900729 675 0.3+ 0.1-
870923 399 2.6+ 1.1+ 871025 399 0.8- 0.1+ 900729 675 0.2- 0.0
870923 399 (3.7+ 1.1-) 871025 399 1.9- 0.4- 900730 675 0.3- 0.2+
870923 399 1.0+ 1.3- 871025 399 0.6- 0.2- 900730 675 0.0 0.4+

1987 WV1 = 1990 RA2
Id. E. Bowell
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden
M 94.69061 (1950.0) P Q
n 0.29085228 Peri. 267.34684 +0.70698117 -0.70714596
a 2.2560840 Node 137.65599 +0.65518992 +0.64899186
e 0.1592244 Incl. 0.94040 +0.26627766 +0.28063172
P 3.39 H 15.0 G 0.15
Residuals in seconds of arc
871126 033 0.4- 0.1+ 871225 033 0.2+ 0.5+ 900914 675 0.3- 0.5+
871126 033 0.4+ 0.2- 880111 033 0.0 0.4- 900918 675 0.0 0.1+
871222 033 0.4- 0.2- 880111 033 0.1+ 0.3- 900918 675 0.0 0.2-
871225 033 0.0 0.4+ 900914 675 0.3+ 0.5-

1988 BJ4 = 1988 BQ5 = 1990 WV3
Id. C. M. Bardwell (d, MPC 14752), B. G. Marsden
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden
M 153.54529 (1950.0) P Q
n 0.28958235 Peri. 226.94759 +0.93327927 -0.35768089
a 2.2626751 Node 153.95990 +0.34725022 +0.87557865
e 0.0940307 Incl. 4.24144 +0.09169018 +0.32469432
P 3.40 H 13.0 G 0.15
Residuals in seconds of arc
880120 809 0.2- 0.0 880123 809 0.3- 0.2- 880129 809 0.5+ 0.3+
880120 809 0.1- 0.3- 880123 809 0.3- 0.3- 880211 399 0.4+ 0.2+ Y
880120 809 0.3+ 0.5- 880123 303 (6.5+ 8.3-) 880211 399 2.9- 0.2+ Y
880121 809 0.1+ 0.8- 880123 303 (6.9+ 8.1-) 880211 399 1.6+ 1.3-
880121 809 0.1+ 0.3- 880125 809 0.7+ 0.1- 901121 809 1.4- 0.3+
880122 303 0.4- 0.6+ 880125 809 0.7+ 0.0 901121 809 1.0- 0.5+
880122 303 0.1+ 0.4+ 880127 809 0.5+ 0.5+ 901123 809 0.3+ 0.3-
880122 303 1.8- 1.3+ 880127 809 0.8+ 0.1+ 901123 809 1.5+ 0.2-
880123 303 0.1- 0.1+ 880129 809 0.3+ 0.3+ 901123 809 0.6+ 0.4-

1988 CJ = 1986 XC2
Id. T. Kobayashi (MPC 12952)
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
M 225.32570 (1950.0) P Q
n 0.21520388 Peri. 314.23556 -0.75521921 +0.65319984
a 2.7578416 Node 266.62647 -0.58470841 -0.70895256
e 0.0439279 Incl. 3.13153 -0.29624318 -0.26592524
P 4.58 H 12.7 G 0.15

Residuals in seconds of arc

861201 010	(4.2+	1.5-)	880213 875	0.2+	0.2+	900916 675	0.8-	1.0-
861201 010	(0.3-	3.4-)	880213 875	(3.8-	3.1-)	900916 675	0.3-	1.1-
861201 010	1.0-	1.3-	880219 875	(3.6-	0.6-)	900919 675	0.2-	0.5-
861203 010	0.6-	0.7+	880219 875	(2.9-	1.1+)	900919 675	0.2+	0.6+
861203 010	(5.9+	2.0+)	880221 875	0.5-	1.6+	900920 675	0.1-	0.6+
861203 010	1.6+	0.6+	880221 875	0.2+	1.8-	900920 675	0.4+	0.1+
880210 875	(5.3+	4.7-)Y	900915 675	0.4+	0.5+			
880210 875	(3.3+	6.2-)Y	900915 675	0.4+	0.8+			

1988 CX3 = 1975 WZ = 1990 TT9
Id. S. Nakano (MPC 17440; unpublished), L. D. Schmadel; 1988 CX3 = 1979 XW (MPC 17440) is invalid

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	45.38078	(1950.0)	P	Q	
n	0.25801110	Peri.	211.62495	-0.08959587	-0.99229394
a	2.4436769	Node	243.63900	+0.93251973	-0.05339358
e	0.0941099	Incl.	5.48130	+0.34982785	-0.11181177
P	3.82	H	13.7	G 0.15	

Residuals in seconds of arc

751128 095	0.0	0.3+	880221 809	0.7+	0.1+	901010 033	0.3-	0.1-
880213 809	1.2-	0.4-	880221 809	1.0+	0.2+	901011 033	0.0	0.2-
880215 809	2.0-	0.9-	880223 809	0.0	0.3+	901011 033	0.2-	0.6-
880216 809	(0.5+	4.4-)	880223 809	0.1+	0.3+	901012 033	0.3+	0.2-
880216 809	(0.9+	4.2-)	880223 809	0.3+	0.3+	901013 033	0.5+	0.5-
880216 809	(0.3+	4.4-)	900926 372	1.6+	1.2+	901014 033	0.2-	0.5-
880221 809	1.1+	0.2+	900926 372	1.5-	0.7+			

1988 JA1 = 1970 OL

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell

M	353.38664	(1950.0)	P	Q	
n	0.27103687	Peri.	121.29421	-0.37746391	+0.86116017
a	2.3647422	Node	122.67029	-0.92569383	-0.34107707
e	0.2230265	Incl.	23.85772	-0.02473711	-0.37692121
P	3.64	H	12.5	G 0.15	

Residuals in seconds of arc

700729 095	0.3+	1.3+	880611 675	0.0	0.5-	880621 688	0.3+	0.6+
880512 675	0.4+	0.8+	880616 675	1.4-	0.6+	880717 675	1.4-	0.6-
880512 675	0.2+	0.6+	880616 675	(2.3-	4.9-)	880718 675	1.3-	1.5-
880608 675	0.1+	1.9-	880619 675	2.3+	0.4+	891205 474	0.5-	0.1+
880609 675	0.2+	0.3+	880619 675	(0.9-	4.8-)	891205 474	0.7+	0.5-

1989 AL1 = 1980 TM2 = 1982 DD1

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	297.63238	(1950.0)	P	Q	
n	0.27418140	Peri.	11.74240	-0.33626935	-0.93296613
a	2.3466270	Node	98.01095	+0.85316851	-0.35953820
e	0.0711495	Incl.	7.45265	+0.39878117	-0.01750646
P	3.59	H	13.1	G 0.15	

Residuals in seconds of arc

801005 809	0.1-	0.2+	890115 400	0.1+	0.2+	890129 400	(4.6+	1.3-)
820221 688	1.7+	0.8+	890115 400	0.5-	0.8+	890130 400	1.8+	0.5+
820221 688	1.5-	0.2-	890115 400	0.3+	0.1+	890130 400	(9.3-	4.8-)
890113 400	(1.5+	5.9+)	890129 400	0.8-	0.4+	890207 400	2.6-	1.8-
890113 400	2.3+	1.2-	890129 400	0.7-	0.4+	890207 400	(6.1-	2.2+)

1989 EM = 1990 RB2
Id. H. E. Holt

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell

M 227.66607	(1950.0)		P	Q
n 0.26980385	Peri.	301.55543	-0.57609240	+0.81710682
a 2.3719414	Node	293.25364	-0.74181675	-0.53360145
e 0.1729177	Incl.	1.32886	-0.34325712	-0.21818785
P 3.65	H 13.5		G 0.15	

Residuals in seconds of arc

890305 675	0.3+	0.8+	890406 675	1.5-	0.5+	900916 675	0.9-	0.2+
890306 675	0.5-	0.7+	890406 675	0.9+	0.9-	900918 675	0.5-	1.4-
890306 046	0.2-	1.1-	890408 675	0.1-	1.3+	900918 675	0.4+	0.2-
890306 046	(3.6+	0.9-)	890408 675	0.7+	0.8-	900919 675	0.5+	0.9+
890308 046	(2.5-	0.4-)	900915 675	1.7+	0.1+	900919 675	(2.3-	0.6-)
890308 046	0.4+	0.4-	900916 675	1.2-	0.6+			

1989 EL2 = 1990 RY1
Id. H. E. Holt

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell

M 238.90816	(1950.0)		P	Q
n 0.30443189	Peri.	223.59357	-0.38517259	+0.92230351
a 2.1884802	Node	23.80499	-0.82372545	-0.32816463
e 0.1033386	Incl.	4.48977	-0.41607507	-0.20411816
P 3.24	H 13.3		G 0.15	

Residuals in seconds of arc

890312 399	1.5+	0.0	890326 399	1.0+	0.5+	890406 399	0.8-	0.0
890312 399	1.0+	0.1-	890326 399	1.0-	0.4-	890406 399	1.3-	0.6-
890312 399	2.3-	0.2+	890326 399	1.7+	0.2+	890406 399	1.1-	0.1-
890312 399	1.6-	1.1+	890404 399	1.0+	0.4+	900915 675	0.1+	0.2-
890312 399	0.4-	0.8-	890404 399	1.6+	1.5-	900917 675	0.1-	0.7-
890326 399	0.1+	0.5+	890404 399	0.4+	0.0	900917 675	0.3+	0.3+

1989 GC1 = 1990 SP11

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden

M 144.93613	(1950.0)		P	Q
n 0.25793834	Peri.	29.16239	+0.79836579	+0.60046848
a 2.4441413	Node	293.86396	-0.56161035	+0.71535359
e 0.1281775	Incl.	2.83763	-0.21726915	+0.35736096
P 3.82	H 14.5		G 0.15	

Residuals in seconds of arc

890403 809	0.7-	1.0+	890408 809	0.5+	0.2-	900916 675	0.6+	0.2+
890403 809	0.6-	0.4+	890408 809	0.8+	0.1-	900916 675	0.3-	0.3+
890403 809	1.0-	0.6+	890408 809	0.7+	0.1-	900919 675	0.0	0.1+
890405 809	1.2+	0.4-	890410 809	0.2-	0.1-	900919 675	0.3-	0.5-
890405 809	1.2+	0.9-	890410 809	0.6-	0.3-			
890405 809	0.4+	0.3+	890410 809	1.8-	0.1-			

1989 GZ1 = 1980 WV = 1990 TD11
Id. R. Nagata (k), S. Nakano

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M 187.82620	(1950.0)		P	Q
n 0.28431068	Peri.	46.56202	+0.49366276	+0.86897613
a 2.2905544	Node	253.04905	-0.80785859	+0.44361887
e 0.0586739	Incl.	2.05588	-0.32196517	+0.21927788
P 3.47	H 15.2		G 0.15	

Residuals in seconds of arc

801130 095	0.0	0.1-	890403 809	0.8+	0.5-	890405 809	1.0+	0.5+
890403 809	0.7+	1.0-	890405 809	0.3+	0.1+	890408 809	0.6-	0.1-
890403 809	0.2+	0.1-	890405 809	0.8+	0.1+	890408 809	1.4-	0.4+

890408 809 1.9- 0.4+ 890410 809 (3.9- 0.2+) 901012 033 0.2+ 0.8+
890410 809 (4.4- 0.0) 901011 033 1.4+ 1.1- 901013 033 0.1+ 0.7-
890410 809 (5.3- 0.5+) 901012 033 0.9- 1.1+ 901014 033 0.8- 0.3-

1989 GH4 = 1976 SW2 = 1990 QS8
Id. H. Kaneda, A. Lowe
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda
M 155.74644 (1950.0) P Q
n 0.27785877 Peri. 319.79472 +0.64725037 +0.76214558
a 2.3258765 Node 350.51026 -0.67539368 +0.56475315
e 0.0219653 Incl. 4.93395 -0.35342658 +0.31652487
P 3.55 H 14.3 G 0.15
Residuals in seconds of arc
760924 095 1.0- 0.5+ 890406 809 0.6- 0.1+ 900816 809 0.1- 0.5-
760929 095 0.9+ 0.3- 890406 809 0.2- 0.1- 900816 809 0.7- 0.3-
890403 809 2.3- 0.4+ 890406 809 1.7+ 0.3- 900818 809 1.2+ 0.5+
890403 809 2.2+ 0.4+ 890409 809 1.4- 1.1- 900818 809 0.3- 0.2+
890403 809 0.1+ 0.1+ 890409 809 (3.4- 1.7-) 900818 809 0.2- 0.4+
890405 809 0.4- 0.5+ 890409 809 (4.5- 2.9-)
890405 809 1.0+ 0.1+ 900816 809 0.0 0.2-

1989 SC7 = 1990 VE8
Id. C. S. Shoemaker
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell
M 82.76642 (1950.0) P Q
n 0.08116828 Peri. 109.14157 +0.95655349 +0.16794021
a 5.2829744 Node 241.81551 -0.23058431 +0.93601835
e 0.0093918 Incl. 15.68751 +0.17842730 +0.30929879
P 12.14 H 9.9 G 0.15
Residuals in seconds of arc
890830 675 1.7- 0.8+ 890930 675 0.1- 0.3- 901111 675 0.4- 0.3-
890901 675 2.1+ 1.2+ 891101 675 0.3+ 0.5+ 901113 675 0.5+ 0.7+
890902 675 0.1- 2.2- 891102 675 0.1- 0.7- 901113 675 0.5+ 0.0
890930 675 0.4- 0.6+ 901111 675 0.6- 0.4-

1989 UQ
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell
M 2.08001 (1950.0) P Q
n 1.12571711 Peri. 14.62069 -0.97569015 +0.21915323
a 0.9152011 Node 178.03812 -0.20324945 -0.90356139
e 0.2649206 Incl. 1.28728 -0.08196579 -0.36816934
P 0.88 H 19.0 G 0.15
From 22 observations 1989 Oct. 26-1990 Jan. 7, mean residual 1".0.

1990 FU = 1980 JK = 1982 SR6 = 1987 SX3
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda
M 206.81871 (1950.0) P Q
n 0.18968908 Peri. 251.07032 +0.02167389 -0.99848268
a 2.9999073 Node 197.91510 +0.96797176 +0.03362535
e 0.0491545 Incl. 9.47208 +0.25012178 -0.04360828
P 5.20 H 11.8 G 0.15
Residuals in seconds of arc
800512 046 0.3- 1.9+ 820928 095 0.3- 0.7- 900318 399 1.2- 0.3-
800512 046 0.4+ 1.6- 870926 688 0.6- 1.8- 900318 399 1.3- 1.5+
820916 095 0.1- 1.9+ 870926 688 0.8+ 0.7+ 900325 400 (3.8- 1.8+)
820919 095 (0.5+ 5.0+) 900318 400 2.3+ 2.9- 900325 400 2.1- 0.6-
820921 095 (0.2- 5.6-) 900318 400 (3.7+ 0.9-) 900329 400 2.5+ 2.1+

1990 MC = 1989 EW5
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda
M 86.31855 (1950.0) P Q
n 0.20180505 Peri. 113.74398 +0.59995906 +0.79812526
a 2.8786003 Node 193.55611 -0.79259176 +0.58358041
e 0.3208584 Incl. 13.61674 -0.10884592 +0.14976641
P 4.88 H 12.7 G 0.15
Residuals in seconds of arc
890302 413 0.1+ 0.9+ 890307 413 0.9+ 1.2- 900622 675 0.1- 0.5+
890302 413 0.0 0.3- 900618 675 0.3+ 0.0 900623 675 0.2+ 0.2-
890307 413 0.8- 0.6+ 900622 675 0.5+ 0.1+ 900623 675 0.6- 0.5-

1990 MF
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell
M 208.08336 (1950.0) P Q
n 0.42675769 Peri. 113.85005 +0.80635913 +0.59120393
a 1.7472236 Node 209.91503 -0.55374053 +0.74506509
e 0.4557362 Incl. 1.86299 -0.20774114 +0.30879755
P 2.31 H 18.5 G 0.15
From 38 observations 1990 June 14-Dec. 7, mean residual 0".9.

1990 MJ
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams
M 97.41969 (1950.0) P Q
n 0.22047798 Peri. 75.73178 +0.82438019 +0.30450744
a 2.7136838 Node 264.72500 -0.48167855 +0.82013536
e 0.3970806 Incl. 28.63185 +0.29729292 +0.48441017
P 4.47 H 13.0 G 0.15
From 36 observations 1990 Jun. 28-Dec. 14, mean residual 0".74.

1990 OT
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell
M 117.89646 (1950.0) P Q
n 0.28513599 Peri. 69.40646 +0.97156111 +0.20651259
a 2.2861323 Node 278.53519 -0.23617014 +0.88046937
e 0.1477274 Incl. 6.72759 +0.01710782 +0.42676250
P 3.46 H 13.5 G 0.15
From 10 observations 1990 July 7-Nov. 19, mean residual 0".7.

1990 OK1
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell
M 125.65189 (1950.0) P Q
n 0.27951975 Peri. 38.69153 +0.93449318 +0.14490247
a 2.3166533 Node 309.70320 -0.32400532 +0.72457137
e 0.3316119 Incl. 25.00064 +0.14745526 +0.67379492
P 3.53 H 13.5 G 0.15
From 13 observations 1990 July 27-Dec. 13, mean residual 0".6.

1990 QB
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell
M 94.76680 (1950.0) P Q
n 0.27645342 Peri. 56.86739 +0.84928561 -0.49770901
a 2.3337522 Node 331.76162 +0.26698145 +0.69261754
e 0.2524926 Incl. 21.84670 +0.45545018 +0.52207919
P 3.57 H 13.5 G 0.15
From 11 observations 1990 Aug. 17-Nov. 19, mean residual 0".6.

1990 QG
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell
M 69.10172 (1950.0) P Q
n 0.18734418 Peri. 49.28421 +0.94769544 -0.31458192
a 3.0248876 Node 328.94000 +0.25210887 +0.84146293
e 0.3743664 Incl. 6.00324 +0.19574082 +0.43929302
P 5.26 H 14.0 G 0.15
From 22 observations 1990 Aug. 20-Dec. 14, mean residual 0".7.

1990 QJ1 = 1990 TF5 = 1980 RD
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda
M 113.80267 (1950.0) P Q
n 0.29653701 Peri. 53.31124 +0.95748125 -0.28448213
a 2.2271533 Node 323.14810 +0.23254625 +0.85942962
e 0.1629452 Incl. 4.58608 +0.17073928 +0.42479482
P 3.32 H 14.2 G 0.15
Residuals in seconds of arc
760521 413 0.3+ 0.7+ 900822 675 1.4+ 0.4- 900920 675 0.7- 0.1-
760628 413 0.0 0.3+ 900822 675 0.5+ 0.1+ 900920 675 0.8- 0.4+
800910 552 (3.4+ 7.4+) 900828 675 0.7+ 0.4- 901009 413 0.9- 0.3-
800910 552 0.3- 1.1- 900828 675 0.3+ 0.4+ 901009 413 0.6- 1.4+
800912 552 0.4+ 0.3- 900915 675 0.4- 0.2+ 901011 413 0.4- 0.4+
800912 552 0.7+ 0.0 900915 675 0.1- 0.1+

1990 QM2
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell
M 161.39152 (1950.0) P Q
n 0.36503150 Peri. 193.37590 +0.98958112 +0.07082400
a 1.9390209 Node 161.14734 -0.06758387 +0.99726486
e 0.0927188 Incl. 22.82541 -0.12712839 +0.02113672
P 2.70 H 13.5 G 0.15
From 13 observations 1990 Aug. 22-Dec. 13, mean residual 0".8.

1990 QT2 = 1975 EF6 = 1980 TC8 = 1985 DS3 = 1987 XS
Id. B. G. Marsden (k), G. V. Williams
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams
M 79.42194 (1950.0) P Q
n 0.29309603 Peri. 36.04731 +0.45007538 -0.89296649
a 2.2445507 Node 27.20595 +0.81586812 +0.40820890
e 0.1509901 Incl. 0.82174 +0.36303080 +0.18967429
P 3.36 H 14.5 G 0.15
Residuals in seconds of arc
750315 095 2.0- 0.9+ 871215 046 0.8- 0.8+ 900829 675 1.6+ 1.1+
801010 095 1.8- 0.4+ 871215 046 (2.8+ 0.9+) 900914 675 0.2- 1.4-
801015 095 2.6+ 1.6+ 871215 046 (3.0- 0.1+) 900914 675 0.3- 0.8-
850220 675 0.3+ 1.5- 871215 046 0.4+ 1.5- 900918 675 0.2- 0.8-
850222 675 1.5+ 1.2- 900824 675 0.0 0.3+ 900918 675 0.1- 0.7-
871214 046 0.6- 1.0+ 900824 675 0.8- 0.4-
871214 046 0.0 0.3- 900829 675 0.5+ 0.5-

1990 QO3
Epoch 1991 Dec. 10.0 ET = JDE 2448600. Bardwell
M 30.34041 (1950.0) P Q
n 0.17816992 Peri. 48.56296 +0.73360980 -0.67930893
a 3.1278539 Node 354.13596 +0.55529780 +0.61522922
e 0.0741301 Incl. 10.64276 +0.39174099 +0.40004048
P 5.53 H 12.0 G 0.15
From 42 observations 1990 Aug. 16-Nov. 16, mean residual 0".6.

1990 QP3
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell

M	81.61098	(1950.0)	P	Q
n	0.17577878	Peri. 245.73935	+0.95590468	+0.29035757
a	3.1561557	Node 97.35723	-0.25075452	+0.88501075
e	0.1801640	Incl. 2.54457	-0.15286730	+0.36393468
P	5.61	H 13.0	G 0.15	

From 32 observations 1990 Aug. 19-Nov. 15, mean residual 0".7.

1990 QB4 = 1968 UR2 = 1979 SF4
Id. H. Kaneda, R. Nagata
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	347.40226	(1950.0)	P	Q
n	0.17479004	Peri. 278.73739	+0.24024380	-0.96964858
a	3.1680469	Node 157.20565	+0.93031696	+0.21663118
e	0.0251468	Incl. 6.73516	+0.27711600	+0.11336912
P	5.64	H 12.0	G 0.15	

Residuals in seconds of arc

681023 095	0.1+	0.5-	900818 809	1.6-	0.8+	900829 675	0.2+	1.5-
790924 095	0.3-	0.9+	900818 809	1.1-	1.1+	900829 675	1.4+	1.0-
900816 809	0.6+	0.4+	900822 675	0.4+	0.7-	900913 675	0.4-	0.9+
900816 809	0.7+	0.7+	900822 675	0.7-	1.3-	900913 675	0.0	0.6+
900816 809	0.2+	0.8+	900823 675	0.4+	1.0-			
900818 809	0.3-	0.9+	900823 675	0.2+	1.2-			

1990 SB
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams

M	151.14862	(1950.0)	P	Q
n	0.26663989	Peri. 86.22813	+0.09814601	+0.99373956
a	2.3906682	Node 189.89292	-0.99092425	+0.09263608
e	0.5484094	Incl. 18.09998	-0.09185036	+0.06245192
P	3.70	H 13.5	G 0.15	

From 27 observations 1990 Sept. 16-Dec. 14, mean residual 0".68.

1990 SL
Id. R. H. McNaught (1983 obs.)
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams

M	147.48933	(1950.0)	P	Q
n	0.27146661	Peri. 222.34412	+0.42275241	+0.80886894
a	2.3622459	Node 76.56290	-0.67722951	+0.58162759
e	0.2838237	Incl. 24.84547	-0.60219647	-0.08625769
P	3.63	H 13.4	G 0.15	

Residuals in seconds of arc

831006 413	0.8-	0.8-	900920 413	0.7+	0.5-	901013 413	0.6+	0.6+
831006 413	0.9+	0.7+	900921 413	0.7+	0.2+	901122 413	0.4-	0.0
900920 413	0.8-	0.3+	900927 413	0.8-	0.5-			

1990 SF2 = 1990 WB = 1987 BQ2
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	109.21937	(1950.0)	P	Q
n	0.17663026	Peri. 241.06829	+0.86849001	+0.47851012
a	3.1460043	Node 90.07770	-0.39767335	+0.82844777
e	0.1391554	Incl. 7.43690	-0.29594090	+0.29103670
P	5.58	H 11.0	G 0.15	

Residuals in seconds of arc

870131 046	0.9+	1.6-	870202 046	(2.9+	6.3-)	870203 046	0.1+	1.3+
870131 046	1.5-	0.4-	870202 046	(1.0+	4.2-)	900917 675	0.2-	0.6-
870201 046	1.3-	0.4-	870203 046	1.7+	0.7+	900917 675	0.3+	0.8+

900919 675 1.1+ 0.3- 901119 413 0.7+ 0.5+ 901205 413 1.0- 0.9-
900919 675 0.1+ 1.1- 901121 413 0.5- 0.2+
901119 413 0.1- 0.2+ 901125 413 0.6- 1.1+

1990 SY3
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams
M 107.28329 (1950.0) P Q
n 0.22612243 Peri. 84.66626 +0.98138500 +0.00713892
a 2.6683346 Node 274.82534 -0.08587957 +0.91014303
e 0.1987071 Incl. 11.10459 +0.17177946 +0.41423266
P 4.36 H 13.0 G 0.15
From 8 observations 1990 Sept. 22-Dec. 7, mean residual 1."06.

1990 SG4
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bardwell
M 161.51049 (1950.0) P Q
n 0.28225260 Peri. 4.58413 +0.22684704 +0.96922738
a 2.3016754 Node 278.54916 -0.89656573 +0.16948031
e 0.3864559 Incl. 5.54749 -0.38040808 +0.17853492
P 3.49 H 13.5 G 0.15
From 16 observations 1990 Sept. 18-Dec. 14, mean residual 0".7.

1990 SO4
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Urata
M 143.90653 (1950.0) P Q
n 0.28201102 Peri. 51.88292 +0.98170250 +0.14658156
a 2.3029897 Node 299.38349 -0.18643257 +0.86982299
e 0.1774855 Incl. 8.01855 +0.03876970 +0.47108578
P 3.49 H 12.7 G 0.15
From 11 observations 1990 Sept. 27-Dec. 23, mean residual 1".4.

1990 SU10 = 1958 XL = 1981 TZ1 = 1986 WS1 = 1988 GK1
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden
M 44.75017 (1950.0) P Q
n 0.21150303 Peri. 125.56912 +0.59096319 -0.80485645
a 2.7899249 Node 288.11514 +0.72030434 +0.55687843
e 0.0589194 Incl. 3.28636 +0.36321365 +0.20516459
P 4.66 H 12.5 G 0.15
Residuals in seconds of arc
581204 330 (8.7- 6.0+) 861201 046 0.3+ 0.2+ 900916 675 0.6+ 0.3-
811003 095 0.5- 1.5+ 861201 046 0.5+ 0.2- 900916 675 1.0+ 0.7-
861129 046 0.5- 0.5- 861203 046 1.0- 1.2- 900919 675 0.3+ 0.8-
861129 046 0.0 0.3- 861203 046 0.1- 0.8- 900919 675 0.1+ 0.9-
861130 046 0.8+ 0.5+ 880410 675 (0.1- 6.0-) 900920 675 0.3+ 1.3-
861130 046 0.3+ 1.2+ 880410 675 1.9- 3.8- 900920 675 0.3- 0.5-

1990 TR
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano
M 145.41152 (1950.0) P Q
n 0.31386902 Peri. 335.19987 +0.98018216 +0.19542558
a 2.1443899 Node 13.64928 -0.15094087 +0.84279870
e 0.4367451 Incl. 7.89931 -0.12829570 +0.50149696
P 3.14 H 14.4 G 0.15
From 45 observations 1990 Sept. 24-Dec. 8, mean residual 0".88.

1990 TB4 = 1986 WQ
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nagata
M 32.60159 (1950.0) P Q
n 0.23613395 Peri. 189.43183 -0.34334228 -0.93894770
a 2.5923706 Node 280.65131 +0.86313314 -0.30611944
e 0.1275080 Incl. 1.29498 +0.37029348 -0.15706083
P 4.17 H 13.8 G 0.15
Residuals in seconds of arc

861125	046	1.5-	1.3+	901011	033	0.5+	0.3-	901014 033 0.1- 0.1+
861125	046	0.4+	0.2-	901012	033	1.2+	0.4+	901018 033 1.2- 0.1+
861128	046	1.5+	1.8-	901012	033	0.1+	0.1-	
861128	046	0.2-	0.7+	901013	033	0.2-	0.2-	

1990 TF4 = 1979 VY2 = 1979 YQ1 = 1988 JQ1
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Ichikawa
M 32.84626 (1950.0) P Q
n 0.26376924 Peri. 201.78705 -0.54542895 -0.83780527
a 2.4079871 Node 281.27456 +0.77256645 -0.49130032
e 0.1370876 Incl. 1.41876 +0.32503591 -0.23813091
P 3.74 H 13.8 G 0.15
Residuals in seconds of arc

791114	095	0.8+	1.9+	901011	033	1.0-	0.6-	901014 033 0.3+ 0.7+
791223	095	0.6-	2.4-	901012	033	0.0	0.0	901018 033 0.3+ 1.0+
880511	413	1.1+	0.7+	901012	033	0.4-	0.1-	
880511	413	0.4-	0.9+	901013	033	0.4+	0.2+	

1990 TP7 = 1987 GF1
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nagata
M 47.13725 (1950.0) P Q
n 0.18907990 Peri. 65.50980 +0.26048381 -0.96546961
a 3.0063472 Node 9.39418 +0.87647990 +0.23470005
e 0.0995635 Incl. 1.43066 +0.40488414 +0.11306773
P 5.21 H 13.8 G 0.15
Residuals in seconds of arc

870401	675	0.4-	0.6+	870403	675	0.5-	0.8-	901014 033 0.1+ 0.3+
870401	675	0.8+	0.2+	901013	033	0.6-	0.2+	901018 033 0.3+ 0.2-
870403	675	(6.1-	1.7+)	901013	033	0.0	0.3-	

1990 UQ
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell
M 52.18192 (1950.0) P Q
n 0.51056719 Peri. 159.28076 +0.41042751 +0.91082050
a 1.5503656 Node 134.92022 -0.84514947 +0.39814993
e 0.4781874 Incl. 3.58031 -0.34244947 +0.10900758
P 1.93 H 17.5 G 0.15
From 11 observations 1990 Oct. 20-Nov. 20.

1990 UH1
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams
M 112.51772 (1950.0) P Q
n 0.27111864 Peri. 306.65871 +0.78396051 -0.59824270
a 2.3642667 Node 90.67912 +0.60926232 +0.69011461
e 0.2447690 Incl. 9.54823 +0.11918618 +0.40724378
P 3.64 H 14.0 G 0.15
From 13 observations 1990 Sept. 28-Dec. 17, mean residual 0".42.

1990 VA
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams
M 133.35010 (1950.0) P Q
n 1.00778523 Peri. 34.40696 -0.34934734 +0.92601138
a 0.9852748 Node 215.75863 -0.90524671 -0.37295509
e 0.2788466 Incl. 14.16819 -0.24183638 +0.05837314
P 0.98 H 19.5 G 0.15
From 19 observations 1990 Nov. 9-Dec. 7.

1990 VB
Epoch 1990 Nov. 25.0 ET = JDE 2448220.5 Bardwell
M 13.35032 (1950.0) P Q
n 0.25747413 Peri. 101.14759 +0.96710816 +0.07790356
a 2.4470733 Node 254.72742 -0.15638934 +0.93287326
e 0.5276167 Incl. 14.53710 +0.20060952 +0.35167956
P 3.83 H 15.5 G 0.15
From 18 observations 1990 Nov. 8-Dec. 14.

1990 VC = 1982 VR5 = 1982 XO4 = 1986 WS3
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden
M 233.58872 (1950.0) P Q
n 0.24003985 Peri. 24.60840 -0.28338823 +0.94075081
a 2.5641771 Node 229.50427 -0.91541203 -0.32323805
e 0.0707906 Incl. 14.17497 -0.28585299 +0.10249426
P 4.11 H 13.5 G 0.15
Residuals in seconds of arc

821114	381	0.8+	0.2-	901108	567	1.2-	1.1+	901206	567	2.2+	0.4-
821114	381	0.7+	0.9-	901109	567	0.0	0.7-	901206	567	1.1+	0.4+
821214	381	0.3-	0.0	901109	567	3.1-	1.2-	901206	567	1.6+	0.3+
821214	381	0.4-	1.1-	901110	567	0.7+	0.1+	901211	567	0.6+	0.4-
861125	010	0.2+	2.8+	901110	567	0.0	0.1+	901211	567	0.8+	0.2-
861125	010	0.3-	0.0	901112	567	0.5-	1.1-	901211	567	1.1+	0.0
861125	010	1.5-	0.6-	901112	567	0.3+	0.2-	901215	567	0.4+	1.4+
861125	010	0.2-	0.4-	901113	567	0.4-	0.6-	901215	567	0.5-	1.5+
901108	567	0.8+	0.5+	901113	567	0.8-	1.1-	901215	567	1.4-	1.4+

1990 VC1 = 1968 UP1
Id. R. H. McNaught (1976, 1984 obs.), B. G. Marsden
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden
M 73.28957 (1950.0) P Q
n 0.22271830 Peri. 304.76932 +0.58090645 -0.79025676
a 2.6954606 Node 108.53503 +0.79773222 +0.50510790
e 0.2244561 Incl. 11.87130 +0.16177454 +0.34692976
P 4.43 H 13.0 G 0.15
Residuals in seconds of arc

681023	095	0.3+	0.8-	901108	413	0.5+	0.6-	901113	413	2.5-	1.2-
760630	413	0.1+	0.2-	901108	413	0.9-	0.4-	901119	413	0.6-	1.5+
840718	413	0.1-	0.4+	901112	413	0.7+	0.6+	901125	413	0.8+	1.0+
840718	413	0.2+	0.2+	901112	413	1.4+	0.1+	901217	413	0.3+	0.2+

1990 VE1
Id. R. H. McNaught (1977, 1985 obs.)
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden
M 126.75153 (1950.0) P Q
n 0.23218515 Peri. 220.13405 +0.98586862 +0.01756838
a 2.6216857 Node 137.93715 +0.01910599 +0.97620447
e 0.1680476 Incl. 14.39893 -0.16642725 +0.21613927
P 4.24 H 13.0 G 0.15

Residuals in seconds of arc

771104	413	0.0	0.2+		901112	413	1.5-	0.0		901126	413	0.3+	0.2+
850720	413	0.0	0.3-		901112	413	0.6+	0.6+		901217	413	0.9-	0.0
900928	413	0.6+	0.4-		901113	413	0.4+	1.7-					
900928	413	0.3-	1.1+		901119	413	0.8+	0.0					

1990 VE2 = 1951 MJ = 1986 RT9 = 1989 NA1

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	335.42012	(1950.0)	P	Q	
n	0.28727783	Peri.	330.88631	-0.93163979	+0.35478536
a	2.2747551	Node	230.11014	-0.31040630	-0.88941858
e	0.1176724	Incl.	5.87811	-0.18893182	-0.28820466
P	3.43	H	12.4	G 0.15	

Residuals in seconds of arc

510627	839	2.4-	0.2-		890702	675	0.1-	0.9+		901115	877	0.6-	0.6-
510627	839	0.9+	0.4-		890704	675	0.1-	1.4-		901115	877	0.1+	1.1+
860908	095	0.3-	0.6+		890704	675	0.5-	0.6-		901124	877	0.5+	0.1+
860911	095	0.0	0.1+		901113	877	0.0	2.0-		901124	877	0.7-	0.6+
890702	675	0.5+	0.6+		901113	877	0.8+	0.4-					

1990 VN2 = 1939 NC = 1979 OF11

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	48.99234	(1950.0)	P	Q	
n	0.19795012	Peri.	303.59318	+0.07923603	-0.98510365
a	2.9158524	Node	140.96287	+0.97591962	+0.04544467
e	0.2472295	Incl.	14.02348	+0.20323030	+0.16584808
P	4.98	H	13.2	G 0.15	

Residuals in seconds of arc

390708	028	0.0	0.2-		901110	372	0.6-	3.3-		901117	372	1.4+	0.9+
790724	413	0.9+	0.7-		901110	372	(4.6-	4.0-)		901117	372	0.4+	0.5+
790727	675	0.2-	0.4+		901113	372	0.8-	1.3+					
790728	413	0.7-	0.5+		901113	372	0.4-	0.7+					

1990 VP2 = 1941 WD = 1979 WM6

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M	58.43923	(1950.0)	P	Q	
n	0.18055543	Peri.	13.14916	+0.45608786	-0.86801780
a	3.1002426	Node	50.08933	+0.79154801	+0.29486725
e	0.1429816	Incl.	14.82700	+0.40673777	+0.39949768
P	5.46	H	12.1	G 0.15	

Residuals in seconds of arc

411116	062	1.5-	0.7-		901113	372	0.8-	0.7-		901121	372	0.4+	2.0+
411117	062	1.7+	0.3+		901115	372	1.5+	1.1+		901123	372	0.2+	0.4-
411117	020	(8.2-	9.6+)X		901115	372	2.5-	0.6+		901123	372	2.5+	1.7+
791117	095	0.5+	0.8-		901117	372	0.3-	2.9-					
901111	372	2.1-	0.6+		901117	372	0.5+	0.8-					

1990 VF3 = 1980 TC11 = 1980 VA1

Id. H. Kaneda, B. G. Marsden (d)

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	178.18705	(1950.0)	P	Q	
n	0.30051980	Peri.	235.80013	+0.94479467	+0.31946314
a	2.2074319	Node	105.47568	-0.27021461	+0.88539183
e	0.1357288	Incl.	4.33484	-0.18532970	+0.33767530
P	3.28	H	13.5	G 0.15	

Residuals in seconds of arc

801008	095	1.1+	0.8-		801110	511	0.9-	1.1+		901113	400	0.5-	0.6-
801110	511	0.4-	0.5+		901111	400	1.0+	2.2-		901113	400	0.9+	0.5+
801110	511	0.4-	0.8+		901111	400	0.1+	2.0-		901116	403	(6.8-	1.4+)

901116 403 (4.6- 0.5-) 901124 400 0.3+ 0.6+ 901208 400 (0.5- 4.5+)
901118 400 (7.3- 4.2+) 901124 400 0.5+ 1.2+
901118 400 (8.5- 0.6+) 901208 400 2.1- 1.1+

1990 VN3 = 1982 DH = 1983 RX1 = 1987 WQ2 = 1989 OF
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda
M 260.93573 (1950.0) P Q
n 0.30437333 Peri. 261.98311 -0.01502450 +0.99979938
a 2.1887609 Node 7.19587 -0.87062324 -0.00656588
e 0.1036215 Incl. 6.07048 -0.49172090 -0.01892350
P 3.24 H 13.4 G 0.15
Residuals in seconds of arc
820220 688 (7.6- 2.1-) 871126 033 2.2+ 0.9- 901117 399 0.4- 0.5-
820220 688 1.1- 1.1- 890721 413 0.3- 0.1+ 901119 399 1.9- 0.2-
830902 688 1.8+ 1.2- 890725 413 0.0 1.5- 901119 399 1.0+ 0.2+
830902 688 1.0+ 1.1- 901111 400 1.0- 0.6+ 901121 400 1.3+ 1.1+
830906 688 0.1- 0.0 901111 400 1.3- 1.6- 901121 400 1.9+ 0.2+
830906 688 0.5- 0.7+ 901113 400 0.8- 2.2- 901213 400 1.2+ 1.7+
830906 095 1.6- 0.7+ 901113 400 2.4- 0.1- 901213 400 2.0+ 0.8+
871126 033 0.6- 0.4- 901117 399 0.9- 0.1+

1990 VB4 = 1955 RA
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Urata
M 167.39268 (1950.0) P Q
n 0.17444453 Peri. 83.74739 +0.70981169 +0.69469971
a 3.1722350 Node 232.17440 -0.69040226 +0.65335945
e 0.0669529 Incl. 8.47757 -0.13968568 +0.30085501
P 5.65 H 11.5 G 0.15
Residuals in seconds of arc
550913 760 1.0+ 0.3- 901114 881 0.2+ 0.4- 901208 881 1.6+ 1.3+
550913 760 0.8- 0.8+ 901114 881 1.8+ 0.8- 901208 881 0.2- 0.4+
550919 760 0.7- 0.3- 901121 881 1.1- 0.5+ 901218 881 1.5+ 0.4-
550919 760 0.4+ 0.2- 901121 881 1.3- 0.4+ 901218 881 2.5- 1.0-

1990 VC4 = 1931 AV = 1976 YX3
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano
M 70.75120 (1950.0) P Q
n 0.21179093 Peri. 353.85995 +0.25583326 -0.95563946
a 2.7873905 Node 81.24839 +0.89307165 +0.17583321
e 0.1375773 Incl. 8.49211 +0.37009779 +0.23629622
P 4.65 H 12.6 G 0.15
Residuals in seconds of arc
310112 690 (5.4- 3.5+) 901114 896 (4.1+ 0.6+)Y 901208 896 0.7- 1.0-
310113 690 0.1- 1.5+ 901114 896 2.1+ 1.2+ Y 901221 896 0.0 0.1-
310115 690 0.1+ 1.3- 901121 896 2.5- 0.1+ 901221 896 1.7+ 0.1-
761218 095 1.7- 1.0+ 901121 896 0.3+ 0.4-
761220 095 1.5+ 0.6- 901208 896 0.6- 0.2-

1990 VD4 = 9505 P-L = 1964 VK2 = 1964 WV = 1986 RK7 = 1986 TD9
Id. H. Kaneda, W. Landgraf (d)
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda
M 121.38938 (1950.0) P Q
n 0.26534295 Peri. 222.56955 +0.83453032 -0.55093988
a 2.3984519 Node 170.85808 +0.51347306 +0.77446461
e 0.1906306 Incl. 1.78170 +0.19976128 +0.31091770
P 3.71 H 14.0 G 0.15
Residuals in seconds of arc
601017 675 0.4+ 0.1+ 601024 675 1.5+ 0.0 641111 330 2.3- 1.0+
601022 675 0.0 0.6- 601026 675 0.5+ 0.1- 641127 330 0.7+ 1.4-

860906 095 0.4+ 1.2+ 901115 400 2.3+ 0.3- 901211 400 2.0+ 0.1+
861002 095 2.3- 1.0- 901118 400 1.2- 0.6+ 901211 400 1.3- 0.7-
901115 400 0.5- 0.0 901118 400 0.3+ 1.2+

1990 VY6 = 1990 UU4 = 1980 TH14 = 1985 UJ4 = 1985 VX3
Id. G. V. Williams (d), T. Urata
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams
M 127.90484 (1950.0) P Q
n 0.19667640 Peri. 271.78605 +0.80804994 +0.53708408
a 2.9284280 Node 55.80522 -0.35275543 +0.77020994
e 0.2135120 Incl. 17.01711 -0.47182508 +0.34397287
P 5.01 H 12.5 G 0.15
Residuals in seconds of arc
801013 095 0.1- 0.6- 901016 809 0.3+ 0.2- 901110 385 0.7- 0.6-
851021 095 0.1+ 1.4+ 901019 809 1.4- 1.1- 901116 385 (6.1- 3.6+)
851111 095 (6.8+ 3.2-) 901026 385 (2.6+ 3.7+) 901116 385 0.6- 2.4+
901016 809 0.6+ 0.2- 901026 385 (5.8+ 0.0) 901122 385 2.0- 1.1-
901016 809 0.1+ 0.5+ 901110 385 2.2+ 0.6+ 901122 385 1.5+ 1.3-

1990 VA7 = 1967 UK = 1973 YM = 1978 TH4 = 1979 YL2 = 1984 UU4
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Urata
M 326.76329 (1950.0) P Q
n 0.17337714 Peri. 124.41008 -0.94984276 -0.19225490
a 3.1852415 Node 45.94244 +0.00911353 -0.80539048
e 0.1034379 Incl. 20.07309 +0.31259506 -0.56069976
P 5.68 H 11.0 G 0.15
Residuals in seconds of arc
671031 095 3.5+ 0.1+ 901112 898 2.7- 2.1+ 901122 898 0.2- 1.3-
731220 095 4.8- 0.2- 901112 898 1.0+ 0.4- 901207 898 1.2- 0.6+
781004 095 0.8- 1.0- 901117 898 0.4- 1.3- 901207 898 0.3+ 0.6+
791224 095 1.9+ 1.8- 901117 898 2.7- 2.4- 901213 400 1.6+ 0.1+
841020 095 0.7+ 0.5+ 901122 898 2.0+ 2.1+ 901213 400 1.6+ 1.8+

1990 WA
Epoch 1990 Nov. 25.0 ET = JDE 2448220.5 Bardwell
M 355.91295 (1950.0) P Q
n 0.24830858 Peri. 11.99344 +0.14641742 -0.89824885
a 2.5069263 Node 70.73868 +0.86739100 -0.08481868
e 0.4679433 Incl. 26.03697 +0.47559941 +0.43122477
P 3.97 H 15.5 G 0.15
From 20 observations 1990 Nov. 13-Dec. 18.

1990 WC = 1972 XK = 1978 EA4
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams
M 70.44244 (1950.0) P Q
n 0.21708958 Peri. 346.17463 +0.58440153 -0.79395603
a 2.7418481 Node 67.80598 +0.76062466 +0.46398647
e 0.2707547 Incl. 10.43221 +0.28271005 +0.39287451
P 4.54 H 12.5 G 0.15
Residuals in seconds of arc
721202 095 0.4+ 0.9- 901012 033 0.5- 0.4- 901121 413 0.3+ 0.0
760527 413 0.5+ 0.3- 901013 033 0.2- 0.7- 901125 413 0.3+ 0.3+
780306 095 0.1- 0.1- 901014 033 0.4- 0.9- 901205 413 0.7+ 0.3-
901011 033 0.1+ 0.3- 901119 413 0.3- 1.5+ 901217 413 0.9+ 0.5+
901012 033 0.2+ 0.4+ 901119 413 1.0- 0.9+

1990 WK = 1964 VV2 = 1984 YV1
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams
M 113.57609 (1950.0) P Q
n 0.14816258 Peri. 254.23031 +0.82836667 +0.53298418
a 3.5370704 Node 73.27386 -0.41978271 +0.79443767
e 0.0968677 Incl. 10.37331 -0.37093280 +0.29119866
P 6.65 H 11.0 G 0.15
Residuals in seconds of arc

641112	330	(8.4-	0.5-)	901120	413	2.4-	1.0+	901206	413	1.2+	1.1-
641130	330	0.6-	1.8+	901123	413	0.5+	0.0	901217	413	0.2+	0.6-
841223	095	0.6+	1.3-	901125	413	0.6+	0.8+	910106	413	0.3+	0.9-

1990 WL = 1979 YK6
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams
M 60.03591 (1950.0) P Q
n 0.17565373 Peri. 268.59459 +0.66328952 -0.74092452
a 3.1576535 Node 139.19779 +0.73456210 +0.61770111
e 0.1348956 Incl. 9.26903 +0.14305776 +0.26358337
P 5.61 H 11.5 G 0.15
Residuals in seconds of arc

791223	095	0.3-	1.4+	901120	413	0.1+	0.3-	901206	413	0.5+	0.7-
901026	385	0.0	0.9+ Y	901123	413	2.7+	0.9-	901217	413	0.6-	1.0-
901026	385	2.5-	2.1+ Y	901126	413	0.2-	1.1-	910106	413	0.6+	0.6-

1990 WS2 = 1975 VQ9 = 1979 XW
Id. H. Kaneda; see also MPC 17635
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda
M 101.23091 (1950.0) P Q
n 0.26646960 Peri. 279.51310 +0.35932784 -0.93291351
a 2.3916866 Node 149.39490 +0.87330910 +0.32724959
e 0.1815497 Incl. 2.65432 +0.32896007 +0.15026673
P 3.70 H 13.8 G 0.15
Residuals in seconds of arc

751109	381	0.1-	0.6+	901121	400	0.1+	1.0+	901213	400	1.0+	0.3-
751109	381	0.0	0.4-	901124	400	0.9+	1.3+	901220	400	1.3-	1.1-
791214	095	0.0	0.8+	901124	400	1.6+	2.7-	901220	400	0.5-	0.5-
901121	400	1.8-	0.2+	901213	400	0.1+	1.2+				

1990 WW2
Epoch 1990 Nov. 25.0 ET = JDE 2448220.5 Bardwell
M 24.41709 (1950.0) P Q
n 0.18349822 Peri. 283.23889 +0.93535570 -0.22615459
a 3.0670073 Node 90.34016 +0.32053715 +0.86705723
e 0.4479639 Incl. 15.78139 -0.14955153 +0.44392101
P 5.37 H 12.5 G 0.15
From 18 observations 1990 Nov. 18-Dec. 23.

1990 XA = 1935 CA = 1938 YM = 1952 UB1 = 1977 BM
Id. T. Nomura (k), S. Nakano
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano
M 354.05123 (1950.0) P Q
n 0.21023943 Peri. 264.84832 -0.99058058 +0.03191150
a 2.8010871 Node 276.93420 +0.02561624 -0.91211065
e 0.0933605 Incl. 7.70900 -0.13451367 -0.40870015
P 4.69 H 11.4 G 0.15

Residuals in seconds of arc

350202	012	0.5+	0.8+		521024	760	1.3+	0.1+		901210	374	0.1-	0.1-
350207	012	0.3+	1.6+		770120	095	1.2+	0.0		901210	374	0.3+	0.9-
381217	024	1.6-	0.2+		901208	374	2.7-	1.0-		901216	871	1.1+	1.4-
521024	760	0.2-	1.7+		901208	374	0.5+	0.2-		901222	871	0.8-	0.2-

1990 XE = 1953 VF = 1964 VJ1 = 1971 SE2 = 1973 FZ = 1975 XS = 1979 XX
= 1981 JA1 = 1981 JV2 = 1986 TX15 = 1986 UE1

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	113.22578		(1950.0)	P	Q
n	0.26793670	Peri.	185.33396	+0.39488357	-0.91469872
a	2.3829481	Node	241.43178	+0.84645777	+0.39860780
e	0.1010456	Incl.	5.61848	+0.35717812	+0.06661893
P	3.68	H	12.2	G 0.15	

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

531103	377	(7.1- | 18.0-)Y	791214	095	2.0+	1.5+		901208	881	0.8-	0.2-
531106	094	(0.04- | 0.02+)X	810503	688	1.2+	3.0-		901208	881	1.0-	0.2-
531107	377	(5.0-	11.2+)	810503	688	(2.6-	27.5-)		901212	403	0.7-	0.1-
531110	094	(0.03- | 0.02+)X	810506	675	0.5-	0.6+		901212	403	0.6-	0.2-
641101	330	6.2-	3.1+	861007	095	1.2+	2.0-		901213	403	1.2-	2.4-
710926	095	3.4-	6.1-	861029	054	0.6+	1.2+		901214	886	0.4+	1.9-
730327	095	2.1+	0.2+	861029	054	1.0+	1.4+		901214	886	(0.7- | 3.5-)
751201	095	5.4+	1.2+	901207	881	1.3-	1.2-		901218	881	0.6-	0.4-
751203	095	6.4+	4.0+	901207	881	2.4-	1.0-		901218	881	0.4-	0.0

1990 XF = 1983 AA2 = 1987 DQ5

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	47.12583		(1950.0)	P	Q
n	0.24160894	Peri.	218.63106	-0.86572958	-0.46817587
a	2.5530582	Node	292.58222	+0.49348397	-0.73937743
e	0.2004266	Incl.	11.05091	+0.08358155	-0.48387227
P	4.08	H	12.2	G 0.15	

Residuals in seconds of arc

830114	704	0.3-	0.3-	901213	896	1.0+	0.3-		901216	896	0.0	0.3+
830122	688	0.1+	0.6+	901213	896	1.1-	0.8-		901219	403	(5.2- | 0.1+)
830122	688	0.4+	0.5+	901214	885	2.7-	2.7-		901219	403	2.3-	0.3-
870218	054	0.1-	0.8-	901214	885	1.1+	2.3+		901225	886	1.6-	0.1-
901208	896	1.6+	0.3-	901216	885	2.8-	0.1-		901225	886	1.8+	0.7+
901208	896	1.7+	0.3-	901216	885	(3.6- | 1.6-)					
901210	896	2.4+	1.4+	901216	896	1.0+	0.2+					

1990 XH = 1950 TP3 = 1953 FC1 = 1967 TF = 1976 GH6 = 1978 RG

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	104.45076		(1950.0)	P	Q
n	0.17341734	Peri.	209.76824	+0.97027666	-0.23542229
a	3.1847428	Node	163.56174	+0.24198828	+0.94598308
e	0.1058826	Incl.	11.42028	-0.00220738	+0.22291784
P	5.68	H	11.2	G 0.15	

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

501013	760	(0.04-	0.03-)X	780901	095	(2.0+	4.9-)		901213	399	0.1-	1.6+
530316	024	0.4-	3.2-	780905	095	0.5-	1.7-		901213	399	1.1+	1.5-
530320	024	0.5-	0.7-	780907	095	1.0+	0.0		901223	399	1.3+	0.6+
671012	095	2.1+	0.3-	901208	399	0.8-	0.3-		901223	399	1.2+	1.0+
671029	095	1.7-	2.2-	901208	399	1.3-	0.4-					
760402	095	(3.7- | 6.2+)	901208	399	1.4-	0.0					

1990 XJ
Epoch 1990 Dec. 15.0 ET = JDE 2448240.5 Williams
M 51.46419 (1950.0) P Q
n 0.50590361 Peri. 97.04837 +0.81683740 +0.17056033
a 1.5598788 Node 254.36529 -0.31879029 +0.92963452
e 0.2169925 Incl. 34.90731 +0.48078001 +0.32663256
P 1.95 H 15.0 G 0.15
From 17 observations 1990 Dec. 15-1991 Jan. 8.

1990 XK = 1937 LP = 1954 LE = 1981 WX5
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Urata
M 18.85861 (1950.0) P Q
n 0.23266323 Peri. 277.99378 -0.96910949 -0.13820533
a 2.6180931 Node 254.23858 +0.20200385 -0.91997337
e 0.1091718 Incl. 12.25424 -0.14149644 -0.36680823
P 4.24 H 11.5 G 0.15
Residuals in seconds of arc (or two decimals in units of degrees)

370609	078(0.10+	0.00+)X	901210	885	1.5+	0.9+	901225	885 (3.4- 0.6-)
540607	760	0.4+	0.7-	901212	881	0.5+	1.7- Y	901225	885	2.2-	0.0
540607	760	0.1-	1.6-	901212	881	(3.4+	3.7-)Y	910105	885	0.2+	0.6+
811124	095	0.1+	1.0-	901214	885	1.6-	1.0-	910105	885	0.6+	0.3+
901210	885	1.2+	0.8+	901214	885	0.4-	1.6-				

1990 XB1 = 1926 BA = 1941 YA = 1943 GO = 1964 BC = 1973 YD = 1976 MF = 1978 TJ8 = 1978 VK14 = 1980 BR3 = 1986 CH1
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Urata
M 14.65551 (1950.0) P Q
n 0.18229686 Peri. 88.25507 -0.96145098 -0.00121826
a 3.0804672 Node 91.60785 -0.10621155 -0.92073685
e 0.1715886 Incl. 15.96690 +0.25363580 -0.39018223
P 5.41 H 10.7 G 0.15
Residuals in seconds of arc

260116	094(24.8- | 2.4-)X	760620	095	(8.6+ | 6.2+)	901217	675	1.7+	0.9-
411223	062	0.6-	1.7+	781008	095	1.5+	2.0+	901217	675	1.1+	1.7-
411225	062	0.3+	2.0+	781101	095	0.5+	2.2-	910106	885	1.8-	0.3-
430408	062	1.1-	0.7+	800122	095	1.0-	1.3-	910106	885	3.0-	0.4-
430408	062	1.0+	0.2-	860210	675	(7.1-	2.8+)Y	910108	877	0.1-	0.6+
430409	062	(6.0+	0.7-)	860210	675	(14.8-	3.3+)	910108	877	0.2-	1.3+
640118	012	0.6+	0.2-	901214	675	2.4+	0.8-	910109	877	0.1+	0.6+
731219	095	2.2-	0.2-	901214	675	2.0+	1.5-	910109	877	0.9-	0.2+

1990 YD = A921 TD = 1929 SN = 1933 SF = 1971 CE = 1974 YR = 1975 BN1
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nagata
M 112.41607 (1950.0) P Q
n 0.24316385 Peri. 192.69092 +0.79286290 -0.60766908
a 2.5421629 Node 204.90700 +0.56818100 +0.76436455
e 0.2718364 Incl. 6.25685 +0.22031518 +0.21560411
P 4.05 H 11.8 G 0.15
Residuals in seconds of arc (or two decimals in units of degrees)

211010	024	3.9-	5.4-	710202	029	0.8-	1.3+	901219	877	1.6-	0.4+
211011	024	2.8+	0.3+	741220	330	1.2+	0.1+	901223	877	0.7-	0.6-
211031	024	0.8+	4.8+	750116	330	(10.4-	0.7+)	901223	877	0.9-	0.6-
290929	690(0.03+	0.04-)X	901218	877	0.7+	1.1-	910106	877	0.2-	0.1+
330921	012	0.4-	1.5+	901218	877	0.7+	0.0	910106	877	0.5-	0.1-
710201	029	0.0	0.1+	901219	877	0.1+	0.2+				

1990 YQ = 1953 VF2 = 1975 VC3 = 1986 TM10
Id. H. Kaneda; 1953 VF2 = 1953 XH (MPC 1084) is invalid
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	131.24435	(1950.0)	P	Q
n	0.26786090	Peri. 195.33063	+0.74103020	-0.67137348
a	2.3833976	Node 206.85342	+0.61867657	+0.68931372
e	0.2108713	Incl. 1.45685	+0.26098570	+0.27222096
P	3.68	H 13.8	G 0.15	

Residuals in seconds of arc

531114	760	(4.3+	0.1-)	861008	095	0.5+	1.6+	901223	399	0.5+	1.0+
531114	760	0.4+	0.3-	901220	399	0.8-	0.5-	901225	399	0.1-	0.1+
751102	095	1.8-	1.1-	901220	399	0.8+	1.4+	901225	399	0.2-	1.1-
751107	095	2.2+	2.5-	901223	399	0.4-	0.9+				
861003	095	1.1-	1.8+	901223	399	0.4+	0.4-				

1990 YT = 1961 BB = 1969 JC = 1982 XM1 = 1984 FE1 = 1989 SB10
Id. H. Kaneda; 1977 EG1 = 1982 XM1 (JAM 1629) is invalid
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	9.26785	(1950.0)	P	Q
n	0.26185493	Peri. 351.08430	-0.93931494	+0.34261622
a	2.4197038	Node 208.97081	-0.31248019	-0.87538934
e	0.1583286	Incl. 2.05463	-0.14157530	-0.34103904
P	3.76	H 13.2	G 0.15	

Residuals in seconds of arc

610122	760	0.7+	0.8+	890926	809	1.3-	0.2+	901220	399	0.7+	0.2+
690505	095	0.4+	2.4+	890926	809	0.8-	0.1+	901223	399	1.0-	0.5+
821213	381	0.4-	0.5+	890926	809	0.4-	0.0	901223	399	1.4-	1.0+
821214	381	0.4+	0.4+	890929	809	0.3+	0.5+	901225	399	0.7+	1.4-
821214	381	0.0	0.8+	890929	809	0.6+	0.3+	901225	399	0.7+	1.9-
840330	675	(3.9+	4.5-)	890929	809	0.9+	0.4+				
840331	675	0.5+	0.5-	901220	399	0.6-	0.8+				

1991 AM
Epoch 1991 Jan. 4.0 ET = JDE 2448260.5 Marsden

M	316.35281	(1950.0)	P	Q
n	0.47450867	Peri. 152.92380	+0.17435062	+0.89615553
a	1.6279458	Node 124.27391	-0.96896547	+0.22989020
e	0.6764874	Incl. 29.59056	-0.17523634	-0.37954679
P	2.08	H 16.5	G 0.15	

From 13 observations 1991 Jan. 14-16.

2541 P-L = 1975 TZ = 1990 RV1
Id. E. Bowell (k), G. V. Williams
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams

M	122.96844	(1950.0)	P	Q
n	0.26225613	Peri. 320.60258	+0.98437068	+0.17589214
a	2.4172354	Node 29.27035	-0.15672126	+0.89755095
e	0.2146634	Incl. 1.02381	-0.08032939	+0.40430713
P	3.76	H 15.0	G 0.15	

Residuals in seconds of arc

600924	675	0.2-	0.5-	601025	675	0.7+	1.1-	900917	675	0.2+	0.4+
600928	675	0.1-	0.1-	601026	675	0.6-	0.4+	900917	675	0.2+	0.1+
600929	675	0.7+	0.0	751003	095	0.1-	0.5+				
601022	675	0.3-	0.7+	900915	675	0.4-	0.5-				

2642 P-L = 1976 KP = 1979 FR1 = 1990 RQ5
Id. E. Bowell, B. G. Marsden
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden

M 246.48640	(1950.0)	P	Q	
n 0.29513736	Peri. 53.73641	-0.57756787	+0.81634014	
a 2.2341935	Node 180.99070	-0.78155999	-0.55367543	
e 0.1313678	Incl. 6.74348	-0.23575269	-0.16441500	
P 3.34	H 14.5	G 0.15		

Residuals in seconds of arc

600924 675	1.5-	1.0+	601022 675	0.5-	1.8+	790323 095	0.4+	0.7+
600926 675	0.4-	1.5+	601025 675	0.1+	1.6+	900915 675	0.1+	3.3-
600928 675	1.1-	0.8+	601026 675	0.5-	1.5+	900917 675	0.6+	2.5-
600929 675	0.9+	2.2+	760525 095	0.0	2.0+	900917 675	1.8+	2.5-

4024 P-L = 1990 RT1
Epoch 1991 Dec.10.0 ET = JDE 2448600.5 Bowell

M 111.12049	(1950.0)	P	Q	
n 0.22904523	Peri. 51.06050	+0.91926446	+0.39046429	
a 2.6455860	Node 285.90542	-0.37529608	+0.83110250	
e 0.1392571	Incl. 2.97449	-0.11876739	+0.39598772	
P 4.30	H 14.0	G 0.15		

Residuals in seconds of arc

600924 675	0.0	0.2-	601017 675	0.8+	0.5+	900915 675	0.3-	0.2-
600925 675	0.0	0.4+	601022 675	0.9+	0.0	900915 675	0.8+	0.1+
600926 675	0.1+	0.1-	601024 675	0.1-	0.6+	900920 675	0.9+	0.6+
600928 675	0.5-	0.4-	601026 675	1.2-	0.9-	900920 675	1.4-	0.4-

4668 P-L = 1990 TB14
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams

M 91.66740	(1950.0)	P	Q	
n 0.26425894	Peri. 27.74723	+0.56688564	-0.82155329	
a 2.4050065	Node 27.84780	+0.72964512	+0.46649314	
e 0.1023484	Incl. 7.47284	+0.38243781	+0.32777178	
P 3.73	H 15.0	G 0.15		

Residuals in seconds of arc

600926 675	0.4-	0.5-	601022 675	1.1+	0.4+	901014 033	0.5+	0.1+
600927 675	0.2-	0.4+	601025 675	0.2-	0.1-	901014 033	1.0-	0.3-
600928 675	0.4+	0.0	601026 675	0.6-	0.2-	901014 033	0.5+	0.2+

6643 P-L = 1990 VA1
Id. S. Nakano, R. Nagata
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nakano

M 120.66602	(1950.0)	P	Q	
n 0.29787948	Peri. 18.52334	+0.65210587	-0.75691566	
a 2.2204568	Node 30.81920	+0.68453367	+0.56356642	
e 0.1692535	Incl. 4.79832	+0.32583982	+0.33086490	
P 3.31	H 14.2	G 0.15		

Residuals in seconds of arc

600926 675	0.7+	0.2-	601025 675	0.3-	0.3-		901114 896	0.4+	1.1-	
600927 675	0.3+	0.1-	601026 675	0.2-	0.4+		901114 896	0.8-	1.0+	
600928 675	0.2+	0.7-	901111 896	0.4-	1.2+		901122 898	(6.6-	2.0-)	
601017 675	0.4-	0.0	901111 896	1.4-	0.6-		901122 898	(5.0-	0.8-)	
601022 675	0.8-	0.2+	901112 896	1.2+	2.2-	Y	901208 896	1.0-	0.5+	
601024 675	0.1+	1.3+	901112 896	2.1+	0.7+	Y				

7082 P-L = 1990 SW11
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden

M	131.41835	(1950.0)	P		Q
n	0.36108802	Peri.	199.09065	+0.83646596	-0.53953825
a	1.9531167	Node	194.77705	+0.53891271	+0.84165151
e	0.0973339	Incl.	22.11896	+0.09948768	-0.02283015
P	2.73	H	15.5	G 0.15	

Residuals in seconds of arc

600924	675	1.2+	2.8+	601022	675	0.5-	0.8-	900917 675 0.1- 0.6+
600925	675	0.8-	0.1+	601025	675	0.2+	0.9+	900920 675 0.0 2.9-
600927	675	0.4+	0.9-	601026	675	0.2-	0.9+	900920 675 0.0 0.3-
601017	675	0.4-	1.8-	900917	675	0.2+	1.4+	

9094 P-L = 1990 VM6
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Nagata

M	138.46005	(1950.0)	P		Q
n	0.26476122	Peri.	167.01335	+0.99756676	-0.05271529
a	2.4019639	Node	196.21819	+0.03976988	+0.96778167
e	0.2561718	Incl.	9.40184	+0.05726177	+0.24621074
P	3.72	H	15.9	G 0.15	

Residuals in seconds of arc

601017	675	0.1+	0.3+	601024	675	0.4+	0.1-	901115 809 0.1+ 0.0
601022	675	0.3-	0.5-	601026	675	0.2-	0.3+	901117 809 0.1- 0.0

1053 T-2 = 1990 RQ1
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell

M	64.48464	(1950.0)	P		Q
n	0.23133410	Peri.	223.53705	+0.61290639	-0.79015173
a	2.6281064	Node	188.66399	+0.72930273	+0.56689478
e	0.1937077	Incl.	0.93195	+0.30407776	+0.23300332
P	4.26	H	14.0	G 0.15	

Residuals in seconds of arc

730919	675	0.5+	0.0	730929	675	0.2-	0.9+	731005 675 0.7+ 0.7-
730919	675	1.1-	0.5+	730929	675	0.4+	0.1-	900914 675 0.6+ 0.2+
730920	675	0.3+	0.9+	730930	675	0.0	0.7+	900914 675 1.1- 1.0-
730924	675	0.1-	0.4+	730930	675	0.3+	0.1+	900918 675 0.1- 0.1-
730924	675	0.2+	1.0+	731004	675	0.3-	1.7-	900918 675 1.3+ 0.8-
730925	675	1.5-	0.6+	731004	675	0.2+	1.8-	
730925	675	0.1+	0.1-	731005	675	0.3-	1.1+	

1125 T-2 = 1990 RB4
Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 (J-P) Marsden

M	71.32791	(1950.0)	P		Q
n	0.17361026	Peri.	175.63662	+0.99122926	-0.13210885
a	3.1823894	Node	191.95649	+0.12073498	+0.91584849
e	0.1766366	Incl.	0.95022	+0.05373654	+0.37916856
P	5.68	H	13.5	G 0.15	

Residuals in seconds of arc

730919	675	0.1+	0.3+	730929	675	1.2+	0.9+	731005 675 0.6- 0.6+
730919	675	0.2+	1.1+	730929	675	1.1+	0.7-	900914 675 1.5- 0.6-
730920	675	0.7+	0.3+	730930	675	0.7+	0.2+	900914 675 0.6+ 0.6+
730924	675	1.0-	0.4-	730930	675	0.4+	0.4+	900918 675 0.3+ 0.2-
730924	675	0.8-	0.1+	731004	675	0.1-	1.6-	900918 675 1.0+ 0.9-
730925	675	0.6-	0.8-	731004	675	0.5+	0.7-	
730925	675	1.3-	0.6+	731005	675	1.0-	0.7+	

1306 T-2 = 1990 QC7
Id. H. Kaneda, R. Nagata

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Kaneda

M	33.99842	(1950.0)	P	Q
n	0.17251969	Peri. 293.98777	+0.71078440	-0.70335919
a	3.1957805	Node 110.71062	+0.64857337	+0.65067616
e	0.1438739	Incl. 0.51754	+0.27228316	+0.28619290
P	5.71	H 13.2	G 0.15	

Residuals in seconds of arc

730919	675	1.4- 0.7-	730924	675	0.9- 0.2-	731004	675	1.0+ 1.0+
730919	675	1.7+ 0.2+	730925	675	(0.1- 3.0-)	731005	675	0.4- 0.6+
730919	675	1.3- 1.0+	730925	675	1.7+ 1.3-	731005	675	0.4- 1.2+
730919	675	(3.2- 1.7-)	730925	675	1.0- 0.4+	900820	809	0.3+ 0.8+
730919	675	0.7+ 0.7+	730925	675	(3.0+ 0.6-)	900820	809	0.3- 1.2+
730920	675	1.2- 0.4+	730925	675	1.1+ 1.1-	900820	809	0.0 0.8+
730920	675	1.3- 1.8+	730925	675	0.4- 0.7+	900826	809	0.0 0.2-
730924	675	0.5- 1.6-	730929	675	0.7+ 0.1+	900826	809	0.4+ 0.2-
730924	675	0.8+ 0.5-	730929	675	0.3+ 0.5-	900826	809	0.5- 0.8-
730924	675	0.3+ 0.6+	730930	675	1.0- 0.8-	900914	675	0.3+ 1.1-
730924	675	0.2+ 0.4-	730930	675	0.6- 0.2-	900914	675	0.2+ 1.1-
730924	675	1.1+ 0.2-	731004	675	0.3+ 0.5-			

2216 T-2 = 1990 RX1

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell

M	113.87134	(1950.0)	P	Q
n	0.17333358	Peri. 275.61171	+0.59567263	+0.80319164
a	3.1857687	Node 30.95285	-0.73096008	+0.54596199
e	0.2224534	Incl. 0.84329	-0.33297370	+0.23834574
P	5.69	H 13.2	G 0.15	

Residuals in seconds of arc

730919	675	0.4+ 0.2+	730925	675	0.3- 1.0-	731004	675	0.6+ 0.5+
730919	675	0.5+ 0.5+	730929	675	0.5- 1.3+	731005	675	0.7+ 0.5+
730920	675	0.5- 0.7-	730929	675	0.5- 0.4+	731005	675	0.3+ 1.3-
730924	675	1.1- 0.8+	730930	675	0.3- 0.3-	900915	675	0.1+ 0.3+
730924	675	(2.0- 2.3+)	730930	675	0.2+ 0.4-	900917	675	0.2+ 0.4-
730925	675	0.9+ 0.4-	731004	675	0.4- 0.0	900917	675	0.2- 0.1-

3151 T-2 = 1990 TF14

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Williams

M	74.55545	(1950.0)	P	Q
n	0.29341272	Peri. 55.44244	+0.03741001	-0.99868305
a	2.2429354	Node 32.46789	+0.89403159	+0.01775246
e	0.0814689	Incl. 3.74989	+0.44643926	+0.04813530
P	3.36	H 15.0	G 0.15	

Residuals in seconds of arc

730919	675	0.6+ 0.8+	730925	675	0.2+ 0.6-	731004	675	0.4+ 0.3+
730919	675	0.2- 0.6+	730929	675	0.4+ 0.8-	731005	675	0.9- 0.3+
730920	675	0.1+ 0.8+	730929	675	0.8+ 0.7-	731005	675	0.3+ 0.5+
730924	675	2.1- 1.2-	730930	675	0.3+ 1.5+	901014	033	0.4+ 0.4-
730924	675	0.2- 0.5-	730930	675	0.6- 0.8+	901014	033	0.9- 0.4-
730925	675	0.8+ 0.9-	731004	675	0.2+ 0.8-	901014	033	0.5+ 0.8+

3159 T-2 = 1990 RR1

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5 Bowell

M	85.08864	(1950.0)	P	Q
n	0.23141475	Peri. 210.12505	+0.94019466	-0.33856706
a	2.6274958	Node 169.46004	+0.33885501	+0.91834108
e	0.1200689	Incl. 11.83029	+0.03480350	+0.20499272
P	4.26	H 14.0	G 0.15	

Residuals in seconds of arc

730919	675	0.1-	1.9+	730929	675	1.0+	0.4+	731005	675	0.2+	0.0
730919	675	1.0+	0.8+	730929	675	0.6+	0.4+	900914	675	0.1-	1.2-
730920	675	0.2+	0.1+	730930	675	0.2-	0.6-	900914	675	0.4+	0.1-
730924	675	0.7-	1.4-	730930	675	0.6-	0.7-	900918	675	0.7-	0.2+
730924	675	0.9-	1.2-	731004	675	0.6+	0.0	900918	675	0.5+	0.8+
730925	675	(1.4+	2.4-)	731004	675	0.5-	0.1+				
730925	675	(2.2+	2.3-)	731005	675	0.5-	0.5+				

3276 T-2 = 1990 SL6

Epoch 1991 Dec. 10.0 ET = JDE 2448600.5				Nagata	
M 313.46771	(1950.0)		P		Q
n 0.23228981	Peri.	30.19044	-0.89461728		-0.43980690
a 2.6208929	Node	123.51134	+0.38866724		-0.85307260
e 0.0100510	Incl.	5.43202	+0.22044886		-0.28077931
P 4.24	H	14.9	G	0.25	

Residuals in seconds of arc

730929	675	1.7+	0.8+	731004	675	0.1+	0.4+	900922	809	0.9+	0.6+
730929	675	1.8+	0.5-	731005	675	1.2-	1.2-	900925	809	0.6+	0.5-
730930	675	0.6-	0.3+	731005	675	1.3-	0.7+	900925	809	0.0	0.9-
730930	675	1.4-	1.0-	900922	809	1.0+	0.8+	900925	809	0.2+	0.5-
731004	675	0.8+	0.8+	900922	809	1.9+	1.9+				

2287 T-3 = 1990 SO10

Epoch 1991 Dec.10.0 ET = JDE 2448600.5				Bowell	
M 154.49879	(1950.0)		P		Q
n 0.22358850	Peri.	337.29941	+0.13124295		+0.99000103
a 2.6884569	Node	300.20749	-0.90006823		+0.09713608
e 0.2045931	Incl.	3.42991	-0.41551470		+0.10228653
P 4.41	H	13.4	G	0.15	

Residuals in seconds of arc

771007	675	1.4+	0.3+	771016	675	0.5-	1.2-	771022	675	0.3+	1.0+
771011	675	1.0-	0.9+	771017	675	0.4+	0.6-	900916	675	0.2-	0.6-
771011	675	0.6-	0.6+	771017	675	0.9-	0.2+	900916	675	0.4+	0.3-
771012	675	0.3+	0.5-	771021	675	0.2+	0.8+	900919	675	1.1+	1.1+
771012	675	0.8-	0.4+	771021	675	0.1+	0.4+	900919	675	1.2-	0.2-
771016	675	0.3+	2.2-	771022	675	0.9+	0.0				

3164 T-3 = 1990 SP10

Epoch 1991 Dec.10.0 ET = JDE 2448600.5				Bowell	
M 78.66836	(1950.0)		P		Q
n 0.22465669	Peri.	189.36219	+0.90825748		-0.41407917
a 2.6799281	Node	195.52377	+0.39692673		+0.89810115
e 0.1093631	Incl.	12.96730	+0.13235380		+0.14816463
P 4.39	H	13.5	G	0.15	

Residuals in seconds of arc

771007	675	0.1+	0.6-	771017	675	0.2-	1.3+	900916	675	1.2+	0.2+
771011	675	1.5-	0.2-	771017	675	0.9-	1.0+	900919	675	0.7-	0.7-
771011	675	0.9-	0.3+	771021	675	0.6-	0.8+	900919	675	0.8-	0.4+
771012	675	0.3+	0.8-	771021	675	0.9-	1.0+	900920	675	0.6+	0.4-
771012	675	0.8+	0.1+	771022	675	1.1+	1.2-	900920	675	0.9-	0.1+
771016	675	0.5+	0.3+	771022	675	1.5+	1.0-				
771016	675	0.6+	0.9-	900916	675	0.5+	0.4+				

NEW NAMES OF MINOR PLANETS.

(2387) Xi'an = 1975 FX
Discovered 1975 Mar. 17 at the Purple Mountain Observatory.
Named for the famous historical city, origin of Chinese splendid culture and home of a rich treasure of human civilization. Known in ancient times as Chang'an, it takes first place among the six ancient capitals of China, serving in this capacity for twelve dynasties since the eleventh century B.C. With Athens, Cairo and Rome it ranks among the four leading ancient capitals of the world. The terra cotta warriors and horses at the Museum of Qin Shihuang are praised as an "eighth wonder of the world". Today, Xi'an is the political and economic center of Shaanxi province and the largest central city in the western part of China. It is an important center for national higher education and scientific research, as well as for the aerospace, aviation, electronic, textile and power industries.

(2425) Shenzhen = 1975 FW
Discovered 1975 Mar. 17 at the Purple Mountain Observatory.
Named for China's first special economic zone, well known at home and abroad. It has often been referred to as an 'overnight' modernized, export-oriented and multifunctional city with industry as its mainstay but combining industry with trade. Located on the east bank of the Pearl river estuary in Guangdong province and neighboring Hong Kong, Shenzhen enjoys geographical advantages and is an ideal tourist attraction. Rich in natural resources and technological expertise, it has a well-developed commodity economy and an efficient transportation and telecommunications system. Shezhen serves as the nation's major gateway to international trade and exchange.

(2773) Brooks = 1981 JZ2
Discovered 1981 May 6 by C. S. Shoemaker on films taken by S. J. Bus at Palomar.
Named in honor of William R. Brooks (1844-1921), American astronomer. As the village photographer at Phelps, New York, he independently discovered comet 1881 V with a 5-inch reflector. Although credited to Denning, this find encouraged Brooks to build a 9 1/4-inch telescope with which he found comet Brooks-Swift 1883 I. During the next 28 years, Brooks discovered 20 more comets to which his name has been attached. Three of those were found during a particularly successful 4-week period in 1886. In 1900 he became professor of astronomy at Hobart College in Geneva, New York. Citation provided by D. H. Levy at the request of the discoverer.

(3243) Skytel = 1980 DC
Discovered 1980 Feb. 19 at the Agassiz Station of the Harvard College Observatory.
Named in honor of the golden anniversary of Sky and Telescope magazine, which for 50 years has chronicled the development of astronomy and space exploration, while serving as a vital link between the amateur and professional astronomical communities.

(4327) Ries = 1982 KB1
Discovered 1982 May 24 by C. S. Shoemaker and S. J. Bus at Palomar.
Named for a large topographic basin in southern Germany formed by the impact of an extraterrestrial body in Miocene time. Within this crater, which lies between the Swabian and Franconian plateaus, is the medieval walled city of Nordlingen with a church made from the impact breccia. The Ries is host to an annual cultural festival in celebration of its

geology, history, art, music, folklore, handicrafts, industry and agriculture.

(4332) Milton = 1983 RC

Discovered 1983 Sept. 5 by C. S. and E. M. Shoemaker at Palomar.

Named for Daniel J. Milton, geologist with the U.S. Geological Survey. Milton, who has carried out geological studies of the moon and Mars, is best known for his investigations of meteorite craters and ancient impact features in Australia. His work on structural deformation at the largest Henbury meteorite craters and in the central uplift of the Gosses Bluff structure, Northern Territory, are tours de force in detailed geologic mapping.

(4340) Dence = 1986 JZ

Discovered 1986 May 4 by C. S. and E. M. Shoemaker at Palomar.

Named for Michael R. Dence, executive director of the Royal Society of Canada and formerly a geologist with the Dominion Observatory. Dence was a pioneer in the geologic investigation of ancient impact craters on the Canadian shield. He made one of the first good estimates of the cratering rate on the earth in Phanerozoic time from studies of impact structures in Canada and Europe.

(4341) Poseidon = 1987 KF

Discovered 1987 May 29 by C. S. and E. M. Shoemaker at Palomar.

In Greek mythology, Poseidon, a brother of Zeus, was lord of the sea and of earthquakes (since the earth is shaken by waves beating on the shore). He ruled all that lived in the sea and gathered clouds and raised storms. Poseidon was the constant enemy of Troy during the Trojan War.

(4368) Pillmore = 1981 JC2

Discovered 1981 May 5 by C. S. Shoemaker on films taken by S. J. Bus at Palomar.

Named for Charles L. Pillmore, geologist with the U.S. Geological Survey. A specialist in the use of aerial photographs in geologic mapping, Pillmore is also an expert on the geology of the Raton Basin of Colorado and New Mexico, where he discovered the Cretaceous-Tertiary boundary claystone at about 20 different sites. Investigation of these sites has produced critical evidence that a large impact occurred at the end of the Cretaceous, coincident with a mass extinction of species.

(4401) Aditi = 1985 TB

Discovered 1985 Oct. 14 by C. S. and E. M. Shoemaker at Palomar.

Aditi was an Indian goddess of the sky and air. She was the mother of 33 gods and of the sun, and also the mother of the 12 Adityas, described in Vedic literature as the gods of the heavenly light.

(4435) Holt = 1983 AG2

Discovered 1983 Jan. 13 by C. S. Shoemaker at Palomar.

Named for Henry H. Holt, planetary geologist with the U.S. Geological Survey and Northern Arizona University. As a member of the Surveyor and Apollo scientific teams, he investigated the detailed geology and photometric properties of the lunar surface. Since retiring from the Geological Survey, he has been a principal participant in the Palomar Asteroid and Comet Survey and is the discoverer or codiscoverer of six comets and numerous asteroids, including (4581) 1989 FC, the numbered asteroid that has made the closest known approach to the earth.

(4441) Toshie = 1985 BB
Discovered 1985 Jan. 26 by T. Seki at Geisei.
Named in memory of Toshie Seki, the discoverer's mother, who encouraged her son to hunt for comets. She died on the day this minor planet was discovered.

(4448) Phildavis = 1986 EO
Discovered 1986 Mar. 5 by C. S. and E. M. Shoemaker at Palomar.
Named for Philip A. Davis, planetary geologist with the U.S. Geological Survey and chief of the Branch of Astrogeology since 1989. Davis has worked on the global geochemistry and petrology of the moon and the geology of Mars, Venus and Arabia. He is known especially for the techniques he has developed for the extraction of quantitative topographic information from spacecraft images and for analysing global patterns of geological and geophysical data.

(4450) Pan = 1987 SY
Discovered 1987 Sept. 25 by C. S. and E. M. Shoemaker at Palomar.
Originally a shepherd god of Arcady, Pan developed into a hunter, fisherman and warrior. He was worshipped at Athens after the Battle of Marathon, where he aided the Athenians by spreading panic through the Persian armies. He has been represented in art as a horned half-man, half goat.

(4451) Grieve = 1988 JJ
Discovered 1988 May 9 by C. S. and E. M. Shoemaker at Palomar.
Named for Richard A. F. Grieve, geologist with the Geological Survey of Canada and chief of their geophysical surveys. Grieve is a leading investigator of impact craters on the earth and moon. He maintains the global census of recognized terrestrial impact structures and has spearheaded the effort to obtain reliable ages for these structures. He also has been a leader in classifying the impacting bodies on the basis of siderophile element abundance patterns in impact melt rocks.

(4458) Oizumi = 1990 BY
Discovered 1990 Jan. 21 by Y. Kushida and O. Muramatsu at Yatsugatake South Base Observatory.
Named for the beautiful village in which Yatsugatake South Base Observatory is located. The name means "great spring". The village, surrounded by forest and located at the southern end of the Yatsugatake-renpo mountain range in central Japan, has many springs, the greatest of which produces 7 million liters of pure water per day.

(4487) Pocahontas = 1987 UA
Discovered 1987 Oct. 17 by C. S. and E. M. Shoemaker at Palomar.
An Indian princess and daughter of Powhatan, celebrated sachem and chief of the Chickahominy tribe of Virginia, Pocahontas (c. 1595-1617) developed a warm friendship for the English colonists and rendered them many services, including the rescue of their leader, captain John Smith, from her father. Her marriage to John Rolfe pioneered the peace between the colonists and the native Americans.

(4531) Asaro = 1985 FC
Discovered 1985 Mar. 20 by C. S. and E. M. Shoemaker at Palomar.
Named for Frank Asaro, nuclear chemist at the Lawrence Berkeley Laboratory of the University of California. With his colleagues Luis and Walter Alvarez and Helen Michel, he discovered the global noble metal anomaly at the Cretaceous-Tertiary boundary, which is now accepted as evidence for impact of a large comet or asteroid. He also discovered noble

metal anomalies in late Eocene and Miocene strata that are thought to indicate other major impacts related to the mass extinction of species.

(4533) Orth = 1986 EL

Discovered 1986 Mar. 7 by C. S. and E. M. Shoemaker at Palomar.

Named for Charles J. Orth, nuclear chemist at the Los Alamos National Laboratory, New Mexico. Renowned for his precise analyses for elements by neutron activation methods, Orth has engaged in a world-wide search for evidence of impact of extraterrestrial bodies with the earth at the times of mass extinctions of species. He discovered noble metal anomalies at the Cretaceous-Tertiary boundary in continental sedimentary deposits of North America and also near the Frasnian-Fammenian boundary in the Upper Devonian and the Cenomanian-Turonian boundary in the Upper Cretaceous.

(4569) Baerbel = 1985 GV1

Discovered 1985 Apr. 15 by C. S. and E. M. Shoemaker at Palomar.

Named for Baerbel K. Lucchitta, planetary geologist with the U.S. Geological Survey. She is a leading investigator of the geology of Mars and the satellites Europa and Ganymede. She is especially well known for her work on the effects of landslides and ice movement on Mars and on mapping the ice cap and the flow of ice in Antarctica.

(4577) Chikako = 1988 WG

Discovered 1988 Nov. 30 by Y. Kushida and M. Inoue at Yatsugatake South Base Observatory.

Named in honor of Chikako Mihashi (1950-), who has for many years worked for the advancement of astronomical education in Japan. Her support greatly contributed to the "Astro Village" at Yatsugatake South Base Observatory. The "Astro Village" was established for the purpose of astronomical education for children.

(4578) Kurashiki = 1988 XL1

Discovered 1988 Dec. 7 by T. Seki at Geisei.

Named for a beautiful city on the shore of the Seto inland sea in western Japan. Minoru Honda (1913-1990), discoverer of 12 comets and 12 novae, carried out his work at the Kurashiki Observatory from 1950 until his death. The city is also the home of the Ohara art museum, one of the most famous such museums in Japan.

(4609) Pizarro = 1988 CT3

Discovered 1988 Feb. 13 by E. W. Elst at the European Southern Observatory.

Named in honor of Guido and Oscar Pizarro, who operate the ESO 1-m Schmidt telescope and who exposed the plates on which this minor planet was discovered. For almost 20 years the two brothers have been renowned for their patient and effective work with the telescope. They took the plates for the two ESO sky surveys and have taken several thousand plates for general programs, including many specifically for the detection and follow-up of comets and minor planets. Citation prepared by H.-E. Schuster at the request of the discoverer.

(4624) Stefani = 1982 FV2

Discovered 1982 Mar. 23 by C. S. Shoemaker and Q. R. Passey at Palomar.

Named for J. Stefani Salazar, granddaughter of the first discoverer.

(4630) Chaonis = 1987 WA

Discovered 1987 Nov. 18 by J. M. Baur at the Osservatorio Chaonis.

Named in honor of the Chions, originally Chaonis, where the observatory of that name is located. The origins of this town in the province of Pordenone date back to the ancient Roman empire and to the division of the Julia Concordia land, where important archeological remains can still be found. The first settlement dates back to the time of the Longobardic king Autari, when it was founded by some of the survivors of the disastrous flood that swept over lower Friuli. Around the year 100 the town came under the jurisdiction of the Aquileia patriarchy. In 1420 it was passed to the republic of Venice and later to the 'free dominion' under the counts of Panigai.

(4634) Shibuya = 1988 BA

Discovered 1988 Jan. 16 by M. Inoue and O. Muramatsu at Kobuchizawa.

Named for a cultural district of Tokyo that contains a concert hall, two theaters, two art museums and nine other educational facilities. Among them is the Gotoh planetarium and Astronomical Museum, which has been visited by 14 million people since its establishment in 1957. Name proposed by the discoverers following a suggestion by six lecturers in the museum.

(4637) Odorico = 1989 CT

Discovered 1989 Feb. 8 by J. M. Baur at the Osservatorio Chaonis.

Named for the renowned solitary traveler and missionary, the Franciscan monk Odorico (1265-1331). Born Odorico Mattiussi in Pordenone and pronounced blessed in 1775, between 1314 and 1330 he traveled in southern Asia, stopping in Ceylon, Sumatra, Java and Borneo as a messenger of the Christian faith and of the light of civilization. He went to Tibet, starting from Peking to Lhasa. He visited the 'canati' di Boccara and Afghanistan and crossed Mesopotamia. On his return to Italy he dictated the famous 'Relatio' (report) of his travels to his brother-monk, Guglielmo di Solagna, in St. Anthony's monastery in Padua. Studies on the Relatio, which continue even today, can be found in major European libraries and archives. Odorico was a contemporary of Dante Alighieri and has been linked to Marco Polo.

(4640) Hara = 1989 GA

Discovered 1989 Apr. 1 by Y. Kushida and O. Muramatsu at the Yatsugatake South Base Observatory.

Named in honor of Megumi Hara, professor at Aoyama-Gakuin University, and an authority on star names, myths and history of the constellations. An observer of variable stars for many years, and long very active in the popularization of astronomy through lectures and articles, he is a leading member of the advisory committee of the Gotoh planetarium and Astronomical Museum. Named by the discoverers following a suggestion by S. Murayama.

(4673) Bortle = 1988 LF

Discovered 1988 June 8 by C. S. Shoemaker on films taken by H. E. Holt, H. R. Holt and T. Rodriquez at Palomar.

Named for John E. Bortle, an American astronomer specializing in comets and variable stars. One of the great visual observers, he has made more than 2000 observations of approximately 150 cometary apparitions over the course of three decades. He has often been first to report unusual cometary activity and is well-known for his analyses of visual magnitude estimates of comets. He has also reported tens of thousands of variable star observations. Bortle has written the Comet Digest column in Sky and Telescope for more than a decade and has edited the American Association of Variable Star Observers Circular since its founding in 1970. Name suggested and citation prepared by C. S. Morris.

EPHEMERIDES.

Periodic Comet Metcalf-Brewington (1991a) Elements MPC 17596

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1991	01 24	00 51.48	-02 57.7	1.688	1.604	68.0	34.7	9.2
1991	02 03	01 18.69	-00 50.1					
1991	02 13	01 46.01	+01 19.5	1.850	1.642	62.2	32.2	9.5
1991	02 23	02 13.33	+03 27.0					
1991	03 05	02 40.56	+05 28.6	2.033	1.703	56.7	29.1	9.9
1991	03 15	03 07.60	+07 21.4					
1991	03 25	03 34.40	+09 02.7	2.237	1.785	50.9	25.7	10.3
1991	04 04	04 00.86	+10 30.6					
1991	04 14	04 26.90	+11 44.2	2.457	1.883	44.8	22.0	10.7
1991	04 24	04 52.47	+12 42.6					
1991	05 04	05 17.46	+13 25.8	2.686	1.992	38.1	18.2	11.1
1991	05 14	05 41.82	+13 54.1					
1991	05 24	06 05.49	+14 08.2	2.913	2.109	30.9	14.3	11.6

1990 TR a,e,i = 2.14, 0.44, 8 Elements MPC 17641

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 24	03 03.83	+28 39.7	1.225	1.797	108.3	31.3	17.5
1991	02 03	03 21.47	+29 03.5					
1991	02 13	03 39.92	+29 26.8	1.530	1.909	96.3	30.9	18.1
1991	02 23	03 59.02	+29 48.1					
1991	03 05	04 18.58	+30 05.8	1.853	2.019	84.7	29.3	18.5
1991	03 15	04 38.47	+30 18.8					
1991	03 25	04 58.58	+30 26.3	2.180	2.125	73.6	26.7	18.9
1991	04 04	05 18.79	+30 27.3					
1991	04 14	05 39.00	+30 21.4	2.500	2.226	62.7	23.6	19.2
1991	04 24	05 59.14	+30 08.4					
1991	05 04	06 19.11	+29 48.1	2.803	2.322	52.0	20.0	19.5
1991	05 14	06 38.84	+29 20.6					
1991	05 24	06 58.30	+28 46.0	3.077	2.412	41.4	16.1	19.6

1990 XJ a,e,i = 1.56, 0.22, 35 Elements MPC 17649

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 24	03 09.78	+04 49.0	0.962	1.525	103.1	38.9	17.4
1991	02 03	03 27.05	+03 05.4					
1991	02 13	03 44.66	+02 00.8	1.221	1.585	91.1	38.5	18.0
1991	02 23	04 02.67	+01 22.0					
1991	03 05	04 21.10	+00 59.0	1.476	1.642	80.8	36.6	18.4
1991	03 15	04 39.94	+00 45.2					
1991	03 25	04 59.20	+00 35.3	1.717	1.695	71.8	34.0	18.7
1991	04 04	05 18.84	+00 25.5					
1991	04 14	05 38.85	+00 13.1	1.936	1.742	63.8	31.1	19.0
1991	04 24	05 59.21	-00 04.4					
1991	05 04	06 19.85	-00 28.6	2.129	1.785	56.6	28.1	19.1
1991	05 14	06 40.76	-01 00.6					
1991	05 24	07 01.91	-01 41.4	2.297	1.820	50.0	25.2	19.3

1990 WW2 a,e,i = 3.07, 0.45, 16 Elements MPC 17647

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991	01 24	05 09.95	+25 23.1	1.508	2.317	135.7	17.2	16.1
1991	02 03	05 10.46	+26 19.4					
1991	02 13	05 14.12	+27 08.1	1.807	2.415	116.5	21.5	16.7
1991	02 23	05 20.55	+27 50.1					
1991	03 05	05 29.28	+28 25.7	2.147	2.514	99.9	22.9	17.2
1991	03 15	05 39.90	+28 55.1					
1991	03 25	05 52.04	+29 18.1	2.502	2.612	85.0	22.4	17.6

1991 04 04	06 05.38	+29 34.6					
1991 04 14	06 19.64	+29 44.5	2.856	2.709	71.4	20.5	18.0
1991 04 24	06 34.62	+29 47.6					
1991 05 04	06 50.09	+29 44.1	3.192	2.804	58.7	17.9	18.2
1991 05 14	07 05.90	+29 33.9					
1991 05 24	07 21.92	+29 17.3	3.499	2.898	46.6	14.7	18.4

1990 WA a,e,i = 2.51, 0.47, 26 Elements MPC 17646

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 24	05 28.11	+69 49.0	0.597	1.404	123.4	35.8	16.6
1991 02 03	05 44.5	+70 25.7					
1991 02 13	06 10.81	+69 59.4	0.757	1.477	115.1	37.2	17.2
1991 02 23	06 42.59	+68 40.4					
1991 03 05	07 15.75	+66 37.3	0.932	1.568	109.1	36.7	17.8
1991 03 15	07 47.61	+63 57.9					
1991 03 25	08 17.12	+60 50.9	1.128	1.670	103.5	35.5	18.3
1991 04 04	08 44.05	+57 24.9					
1991 04 14	09 08.58	+53 46.8	1.347	1.780	97.4	34.0	18.8
1991 04 24	09 31.13	+50 02.5					
1991 05 04	09 52.03	+46 16.6	1.592	1.894	90.7	32.2	19.3
1991 05 14	10 11.59	+42 32.5					
1991 05 24	10 30.10	+38 52.5	1.861	2.009	83.1	30.0	19.7

(4688) 1980 WF a,e,i = 2.23, 0.51, 6 Elements MPC 17609

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 24	07 15.30	-16 08.7	0.178	1.128	140.9	33.4	16.5
1991 01 29	07 31.65	-15 20.4					
1991 02 03	07 45.96	-14 13.1	0.215	1.166	143.6	30.1	16.9
1991 02 08	07 58.57	-12 52.9					
1991 02 13	08 09.84	-11 25.0	0.260	1.212	146.0	27.1	17.3
1991 02 18	08 20.11	-09 53.8					
1991 02 23	08 29.66	-08 23.4	0.316	1.265	146.6	25.5	17.8
1991 02 28	08 38.69	-06 56.5					
1991 03 05	08 47.33	-05 35.0	0.383	1.324	145.1	25.4	18.3
1991 03 10	08 55.70	-04 20.3					
1991 03 15	09 03.91	-03 13.2	0.463	1.387	141.7	26.4	18.8
1991 03 20	09 12.04	-02 14.3					
1991 03 25	09 20.13	-01 23.8	0.555	1.453	137.0	27.9	19.4
1991 03 30	09 28.21	-00 41.7					
1991 04 04	09 36.28	-00 07.5	0.659	1.521	131.8	29.4	19.9
1991 04 09	09 44.34	+00 19.3					
1991 04 14	09 52.42	+00 39.0	0.776	1.589	126.2	30.6	20.4
1991 04 19	10 00.52	+00 52.1					
1991 04 24	10 08.63	+00 59.1	0.903	1.658	120.5	31.5	20.8
1991 04 29	10 16.75	+01 00.6					
1991 05 04	10 24.86	+00 57.0	1.041	1.727	114.9	32.0	21.2
1991 05 09	10 32.96	+00 48.9					
1991 05 14	10 41.06	+00 36.7	1.188	1.796	109.3	32.1	21.6
1991 05 19	10 49.16	+00 20.8					
1991 05 24	10 57.25	+00 01.4	1.343	1.864	103.7	31.9	21.9

Comet Arai (1991b) Elements MPC 17596

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1991 01 24	07 54.72	+48 42.1	0.633	1.566	150.3	18.1	11.0
1991 02 03	07 12.65	+59 35.7					
1991 02 13	06 35.48	+65 12.1	0.975	1.697	119.7	30.4	12.2
1991 02 23	06 10.91	+68 00.4					
1991 03 05	06 00.50	+69 30.7	1.383	1.856	101.5	31.6	13.4
1991 03 15	06 02.3	+70 25.1					

1991 03 25	06 14.0	+71 01.0	1.791	2.034	88.9	29.4	14.3
1991 04 04	06 33.2	+71 24.4					
1991 04 14	06 58.3	+71 35.6	2.177	2.224	79.4	26.3	15.2
1991 04 24	07 27.7	+71 33.7					
1991 05 04	07 59.9	+71 17.2	2.533	2.421	72.0	23.3	15.9
1991 05 14	08 33.5	+70 44.7					
1991 05 24	09 07.31	+69 56.4	2.857	2.622	66.4	20.7	16.5
1991 06 03	09 40.30	+68 53.0					
1991 06 13	10 11.89	+67 36.0	3.151	2.824	62.2	18.5	17.0
1991 06 23	10 41.76	+66 07.6					
1991 07 03	11 09.81	+64 30.2	3.418	3.027	59.3	16.8	17.5
1991 07 13	11 36.11	+62 46.0					
1991 07 23	12 00.83	+60 57.3	3.661	3.229	57.4	15.4	17.9
1991 08 02	12 24.13	+59 06.3					
1991 08 12	12 46.19	+57 14.8	3.884	3.430	56.5	14.3	18.3

1991 AM a,e,i = 1.63, 0.68, 30 Elements MPC 17650

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1991 01 24	14 36.77	+15 00.1	0.772	1.265	91.3	51.1	18.3
1991 01 29	15 06.83	+15 57.1					
1991 02 03	15 40.76	+16 50.0	0.668	1.151	86.0	58.6	18.0
1991 02 08	16 18.48	+17 30.3					
1991 02 13	16 59.29	+17 47.9	0.610	1.033	76.5	68.4	17.9
1991 02 18	17 41.87	+17 34.4					
1991 02 23	18 24.50	+16 45.9	0.607	0.910	64.4	78.6	18.0
1991 02 28	19 05.57	+15 24.7					
1991 03 05	19 44.06	+13 37.7	0.660	0.787	52.3	86.1	18.1

Periodic Comet Hartley 1 (1985 VII) Elements MPC 13045

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		m2
1991 02 13	14 40.97	+05 57.2	1.377	1.905	-1.08	+27.6	20.5
1991 02 23	14 50.54	+04 16.9					
1991 03 05	14 57.31	+02 27.3	1.145	1.856	-1.73	+33.2	20.0
1991 03 15	15 00.66	+00 23.0					
1991 03 25	14 59.95	-02 02.6	0.952	1.820	-2.74	+39.2	19.5
1991 04 04	14 54.79	-04 55.3					
1991 04 14	14 45.16	-08 16.1	0.824	1.800	-4.15	+44.6	19.1
1991 04 24	14 31.85	-11 59.1					
1991 05 04	14 16.69	-15 50.1	0.790	1.796	-5.58	+47.5	19.0
1991 05 14	14 01.99	-19 31.6					
1991 05 24	13 50.04	-22 51.3	0.859	1.809	-6.34	+45.8	19.2
1991 06 03	13 42.33	-25 45.9					
1991 06 13	13 39.39	-28 17.7	1.009	1.837	-6.27	+40.3	19.7
1991 06 23	13 41.17	-30 32.2					
1991 07 03	13 47.19	-32 34.0	1.209	1.880	-5.75	+33.5	20.2
1991 07 13	13 56.92	-34 25.9					
1991 07 23	14 09.86	-36 10.0	1.439	1.936	-5.11	+27.0	20.7
1991 08 02	14 25.55	-37 46.6					
1991 08 12	14 43.61	-39 15.2	1.687	2.003	-4.45	+21.2	21.2
1991 08 22	15 03.75	-40 35.1					
1991 09 01	15 25.65	-41 45.1	1.947	2.079	-3.77	+16.1	21.6

Periodic Comet Wild 4 (1990a) Elements MPC 16551

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1991 02 13	19 01.47	-25 26.2	3.264	2.579	39.4	14.1	19.7
1991 02 23	19 19.11	-25 05.0					
1991 03 05	19 35.62	-24 39.8	3.159	2.662	51.8	17.0	19.7
1991 03 15	19 50.91	-24 12.1					
1991 03 25	20 04.85	-23 43.7	3.015	2.745	64.9	19.2	19.8

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1991 04 04    20 17.33   -23 16.4
1991 04 14    20 28.22   -22 52.0    2.840    2.829    79.2    20.4    19.8
1991 04 24    20 37.36   -22 32.2
1991 05 04    20 44.61   -22 18.5    2.649    2.913    94.8    20.2    19.8
1991 05 14    20 49.79   -22 12.5
1991 05 24    20 52.72   -22 15.1    2.462    2.996   112.3    18.2    19.7
1991 06 03    20 53.28   -22 26.7
1991 06 13    20 51.42   -22 46.9    2.307    3.078   131.7    14.3    19.7
1991 06 23    20 47.20   -23 14.2
1991 07 03    20 40.90   -23 45.9    2.219    3.159   153.1     8.4    19.7
1991 07 13    20 33.00   -24 18.4
1991 07 23    20 24.21   -24 48.2    2.227    3.239   173.7     2.0    19.8
1991 08 02    20 15.38   -25 11.9
1991 08 12    20 07.30   -25 27.8    2.348    3.317   159.7     6.1    20.1
1991 08 22    20 00.69   -25 35.3
1991 09 01    19 56.00   -25 34.7    2.573    3.394   138.3    11.4    20.4
1991 09 11    19 53.45   -25 27.1
1991 09 21    19 53.09   -25 13.6    2.877    3.469   118.4    14.7    20.7

1991 01 14    08 53.67   +18 20.5    1.576    2.529   162.0     6.9    16.0
- 8.56  -1.12  +128.8  + 6.7  1988 JA1  17635  - 9.96  +0.77  +121.2  - 8.7
1991 02 13    08 22.39   +25 04.2    1.517    2.461   158.1     8.6    15.9

1991 02 13    11 05.42   +18 40.3    2.458    3.400   159.4     5.9    17.1
- 7.10  -0.66  + 37.8  - 1.1  1977 RR7  12569  - 7.78  +0.46  + 11.8  - 6.7
1991 03 15    10 41.03   +20 05.0    2.449    3.392   158.1     6.3    17.1

1991 03 15    11 35.77   +41 27.0    1.923    2.769   141.2    13.0    16.9
-10.66  -0.02  + 56.3  -18.5  1988 JO   13469  - 5.74  +1.41  - 47.2  -13.9
1991 04 14    11 08.54   +41 31.9    2.088    2.738   120.6    18.4    17.2

1991 03 15    11 37.15   +02 47.6    2.182    3.177   179.6     0.1    17.5
- 7.54  -0.01  + 54.3  - 0.2  1978 RD10 15700  - 4.53  +0.89  + 32.9  - 6.1
1991 04 14    11 17.39   +05 09.1    2.321    3.196   145.2    10.3    18.3

1991 03 15    11 37.59   +10 02.9    2.214    3.203   172.6     2.3    17.2
- 9.08  -0.04  + 30.3  - 3.3  1984 UX2  12202  - 5.94  +0.96  -  2.3  - 6.6
1991 04 14    11 13.23   +10 50.8    2.338    3.186   141.7    11.2    17.8

1991 03 15    11 37.35   +03 36.5    2.554    3.548   178.9     0.3    17.9
- 7.19   0.00  + 49.5  - 0.5  1983 VN7  15411  - 4.58  +0.78  + 29.6  - 5.4
1991 04 14    11 18.26   +05 44.1    2.704    3.574   145.2     9.2    18.5

1991 03 15    11 37.63   +02 01.4    4.422    5.416   179.2     0.2    16.9
- 4.83  -0.01  + 25.9  + 0.1  6581 P-L  17219  - 3.48  +0.43  + 17.9  - 2.6
1991 04 14    11 24.36   +03 12.0    4.553    5.426   147.6     5.7    17.4

1991 03 15    11 39.21   +00 08.2    1.300    2.293   177.3     1.2    16.5
- 9.22   0.00  + 90.2  + 1.1  1976 SG2  11434  - 4.36  +1.37  + 57.1  -10.2
1991 04 14    11 16.33   +04 09.8    1.437    2.332   145.4    14.1    17.4

1991 03 15    11 40.96   +03 43.4    1.928    2.922   178.3     0.6    17.8
- 7.60  -0.02  + 45.2  - 0.8  1978 VT4  15404  - 4.34  +0.97  + 20.6  - 6.4
1991 04 14    11 21.23   +05 32.4    2.076    2.960   145.9    10.9    18.5

1991 03 15    11 41.51   +01 39.0    1.667    2.661   178.2     0.7    17.2
- 9.66  -0.06  + 45.7  + 0.4  (4400)    16013  - 5.75  +1.18  + 24.0  - 6.6
1991 04 14    11 16.11   +03 36.5    1.791    2.678   145.5    12.2    17.9
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1991 03 15    11 42.08   -00 44.0    2.201    3.194   176.2     1.2    16.2
- 8.23  -0.06  + 25.9  + 1.4  (4380)    15870  - 5.39  +0.90  + 16.9  - 4.0
1991 04 14    11 19.89   +00 30.2    2.316    3.207   147.4     9.7    16.8

1991 03 15    11 42.66   +10 08.7    1.812    2.801   172.3     2.7    17.3
- 8.67  -0.01  + 55.8  - 4.4  1989 UG3  15896  - 4.99  +1.07  + 12.1  - 8.7
1991 04 14    11 20.18   +11 58.3    1.980    2.843   142.6    12.4    18.0

1991 03 15    11 42.79   -04 00.1    1.534    2.524   173.1     2.7    16.7
- 8.73  -0.19  + 74.6  + 5.0  1988 ME   13471  - 5.27  +1.19  + 67.1  - 6.8
1991 04 14    11 19.24   -00 05.7    1.583    2.487   147.5    12.5    17.2

1991 03 15    11 42.68   +10 17.6    1.660    2.649   172.2     2.9    16.5
- 8.02  -0.09  + 64.8  - 4.3  1986 AA2  16579  - 4.49  +1.11  + 17.3  - 9.8
1991 04 14    11 21.72   +12 30.9    1.782    2.650   142.6    13.3    17.1

1991 03 15    11 44.65   -10 35.5    4.505    5.477   166.6     2.4    17.2
- 4.95  -0.05  + 21.1  + 2.8  1985 TG3  12786  - 3.78  +0.41  + 28.3  - 0.5
1991 04 14    11 30.70   -09 15.4    4.578    5.483   151.8     5.0    17.4

1991 03 15    11 45.53   -04 17.4    1.332    2.322   172.6     3.2    17.8
- 8.88  -0.10  + 72.4  + 4.5  6214 P-L  14629  - 4.59  +1.31  + 59.3  - 7.7
1991 04 14    11 22.74   -00 37.4    1.447    2.361   148.4    12.8    18.4

1991 03 15    11 47.23   +02 14.6    1.482    2.476   177.0     1.2    16.5
- 8.94  -0.27  + 50.4  + 1.0  4598 P-L  13687  - 5.66  +1.21  + 26.9  - 7.7
1991 04 14    11 22.61   +04 26.5    1.527    2.429   146.7    13.1    17.1

1991 03 15    11 48.35   -00 25.1    1.633    2.626   175.6     1.7    17.6
- 9.92  -0.18  + 60.9  + 2.0  6040 P-L  15570  - 6.40  +1.18  + 42.8  - 7.0
1991 04 14    11 21.37   +02 27.3    1.728    2.627   147.2    12.0    18.2

1991 03 15    11 48.92   +03 37.1    1.239    2.233   176.5     1.6    16.9
- 8.87  -0.09  + 71.2  - 1.3  1987 BS2  16697  - 4.38  +1.34  + 30.4  -10.2
1991 04 14    11 26.40   +06 25.8    1.381    2.287   146.7    13.9    17.8

1991 03 15    11 49.15   +06 11.3    2.509    3.501   175.1     1.4    17.1
- 7.55  -0.05  + 49.5  - 1.7  (4298)    15677  - 5.10  +0.77  + 23.7  - 6.1
1991 04 14    11 28.66   +08 08.9    2.686    3.564   146.4     9.0    17.7

1991 03 15    11 51.67   -43 11.9    1.273    2.090   -2.47   +12.5    16.5
-13.95  -0.62  - 21.5  +28.4  1989 PA   15563  - 8.51  +2.08  +118.7  +13.6
1991 04 14    11 12.97   -40 18.5    1.268    2.116   -2.21   +17.2    16.5

1991 03 15    11 50.37   -02 58.0    1.669    2.659   173.3     2.5    17.0
-10.22  -0.21  + 42.9  + 3.4  1949 QL   11856  - 6.84  +1.17  + 35.5  - 5.2
1991 04 14    11 22.23   -00 44.4    1.754    2.661   148.4    11.4    17.5

1991 03 15    11 51.10   -00 51.4    1.714    2.705   174.8     1.9    16.1
- 9.24  -0.13  + 54.1  + 1.8  1989 SJ   15564  - 5.86  +1.10  + 37.6  - 6.4
1991 04 14    11 26.18   +01 41.2    1.838    2.744   148.5    11.0    16.7

1991 03 15    11 50.98   +07 12.6    1.708    2.699   174.0     2.2    17.6
- 9.25  -0.11  + 54.9  - 2.8  1985 PG2  15412  - 5.76  +1.11  + 16.7  - 8.4
1991 04 14    11 26.21   +09 10.4    1.853    2.738   145.3    12.0    18.3

1991 03 15    11 51.58   -09 37.1    1.558    2.537   167.1     5.0    16.9
- 9.32  -0.23  + 64.8  + 7.8  1989 SL   16877  - 5.96  +1.19  + 73.9  - 4.6
1991 04 14    11 26.05   -05 46.2    1.625    2.546   150.3    11.2    17.3
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1991 03 15    11 52.20   +16 47.8    1.753    2.726   165.3     5.3    16.7
- 9.29  -0.21  + 58.0  - 7.4  (4433)    16216  - 6.14  +1.11  -  3.0  -11.0
1991 04 14    11 26.61   +18 16.7    1.859    2.706   140.1    13.8    17.2

1991 03 15    11 51.88   +05 09.8    1.950    2.942   175.2     1.6    17.1
- 7.96  -0.14  + 64.8  - 1.2  1984 SO5  15709  - 5.23  +0.94  + 34.3  - 7.8
1991 04 14    11 30.11   +07 50.5    2.072    2.963   146.8    10.7    17.7

1991 03 15    11 52.58   -00 13.9    1.535    2.527   174.8     2.0    16.3
- 7.96  -0.22  + 58.4  + 2.0  1973 EK   13696  - 4.85  +1.11  + 39.8  - 7.2
1991 04 14    11 30.93   +02 30.5    1.620    2.535   149.4    11.6    16.9

1991 03 15    11 59.09   -00 02.1    1.399    2.390   173.5     2.7    16.0
-10.13  -0.23  + 32.0  + 1.6  1989 SG   16434  - 6.36  +1.28  + 15.2  - 6.2
1991 04 14    11 31.55   +01 23.1    1.520    2.440   149.9    11.9    16.7

1991 03 15    11 58.70   -00 04.9    1.676    2.666   173.6     2.4    16.9
- 8.72  -0.25  + 59.4  + 1.7  (4281)    15543  - 5.90  +1.05  + 40.9  - 7.0
1991 04 14    11 34.38   +02 41.5    1.772    2.688   150.1    10.7    17.5

1991 03 15    11 59.67   +04 53.5    1.903    2.893   173.6     2.2    18.0
- 8.66  -0.26  + 63.9  - 0.7  1981 RF    8908  - 6.28  +0.95  + 34.6  - 7.9
1991 04 14    11 35.03   +07 34.4    1.990    2.890   148.0    10.6    18.5

1991 03 15    11 59.66   +12 24.2    2.088    3.069   168.6     3.7    17.8
- 8.29  -0.21  + 66.9  - 4.4  1989 XF   16030  - 5.95  +0.89  + 21.4  - 9.3
1991 04 14    11 36.28   +14 45.7    2.213    3.082   144.1    11.0    18.3

1991 03 15    12 00.59   +06 38.7    1.957    2.946   172.6     2.5    17.6
- 8.70  -0.23  + 13.0  - 1.9  4636 P-L  12699  - 6.27  +0.93  - 12.7  - 5.8
1991 04 14    11 35.99   +06 46.2    2.056    2.958   148.6    10.2    18.1

1991 03 15    12 01.86   +14 24.4    1.679    2.656   166.6     5.0    16.5
- 9.60  -0.24  + 36.7  - 6.6  1989 UA   15896  - 6.47  +1.12  - 17.1  - 9.5
1991 04 14    11 35.25   +14 59.1    1.808    2.683   143.8    12.8    17.0

1991 03 15    12 01.10   -14 01.4    2.280    3.240   162.2     5.4    18.3
- 7.69  -0.29  + 63.0  + 7.9  1971 US1  13589  - 6.03  +0.78  + 84.5  - 1.3
1991 04 14    11 38.56   -10 03.2    2.274    3.204   153.7     8.0    18.4

1991 03 15    12 01.99   +05 55.0    1.503    2.492   172.6     2.9    16.8
- 8.86  -0.36  + 64.0  - 1.3  1967 UT    9031  - 6.15  +1.13  + 26.3  - 9.6
1991 04 14    11 36.72   +08 25.7    1.572    2.480   147.9    12.4    17.3

1991 03 15    12 02.37   -00 08.3    1.654    2.643   172.7     2.7    16.5
- 8.99  -0.48  + 46.7  + 2.7  1967 KB   13852  - 7.14  +1.02  + 34.7  - 6.2
1991 04 14    11 35.41   +02 10.2    1.642    2.563   150.5    11.1    16.8

1991 03 15    12 02.95   -05 54.6    1.588    2.571   169.0     4.2    17.4
-10.18  -0.46  + 36.6  + 5.7  1949 QC1   9583  - 7.83  +1.13  + 41.8  - 4.0
1991 04 14    11 32.98   -03 39.3    1.606    2.534   151.7    10.8    17.7

1991 03 15    12 02.78   -15 47.3    2.136    3.090   160.4     6.2    16.7
- 9.04  -0.33  + 18.5  + 8.3  (4384)    15871  - 7.14  +0.88  + 47.7  + 0.7
1991 04 14    11 36.29   -13 53.9    2.158    3.085   152.9     8.5    16.8

1991 03 15    12 03.57   -01 01.1    1.196    2.186   172.1     3.6    16.4
- 9.96  -0.64  + 39.6  + 3.8  1981 ET26 10541  - 7.42  +1.36  + 27.6  - 7.2
1991 04 14    11 33.78   +01 00.2    1.192    2.123   150.6    13.4    16.8
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1991 03 15    12 03.30   -02 02.3    1.641    2.628   171.6     3.2    16.5
- 9.65  -0.47  + 52.2  + 3.8  1985 RE2  14193  - 7.57  +1.06  + 44.5  - 5.9
1991 04 14    11 34.64   +00 40.7    1.649    2.572   150.9    10.9    16.8

1991 03 15    12 03.08   +09 43.7    1.738    2.723   170.1     3.6    17.2
- 9.29  -0.33  + 55.9  - 3.4  1989 WV1  15725  - 6.80  +1.04  + 12.7  - 9.4
1991 04 14    11 36.41   +11 37.5    1.820    2.711   146.1    11.9    17.7

1991 03 15    12 04.75   -06 24.5    1.715    2.696   168.4     4.3    16.2
- 9.40  -0.34  +  6.2  + 4.8  1979 SN   14945  - 6.91  +1.04  + 14.4  - 2.2
1991 04 14    11 37.73   -05 40.8    1.787    2.720   153.2     9.6    16.6

1991 03 15    12 05.16   -00 58.3    1.942    2.930   171.7     2.8    17.6
- 7.69  -0.30  + 43.9  + 2.1  1981 EH34 15410  - 5.75  +0.86  + 33.0  - 5.2
1991 04 14    11 42.87   +01 10.6    2.010    2.936   152.6     9.0    18.0

1991 03 15    12 09.17   +13 30.9    1.888    2.864   166.3     4.7    17.3
- 9.19  -0.31  + 62.5  - 5.4  (4363)    15864  - 6.86  +0.97  + 10.6  -10.1
1991 04 14    11 42.75   +15 29.0    2.011    2.889   144.8    11.5    17.7

1991 03 15    12 10.63   -05 29.4    1.622    2.602   168.0     4.5    17.0
- 9.25  -0.42  + 60.6  + 5.3  1979 UQ   15552  - 7.00  +1.05  + 58.9  - 5.5
1991 04 14    11 43.55   -02 10.3    1.682    2.620   153.9     9.7    17.4

1991 03 15    12 12.31   +02 44.4    1.652    2.639   170.8     3.5    16.4
- 8.95  -0.43  + 77.1  + 0.8  (4422)    16213  - 6.93  +1.00  + 49.2  - 8.9
1991 04 14    11 45.82   +06 11.8    1.718    2.640   151.0    10.6    16.9

1991 03 15    12 13.32   +03 06.7    1.721    2.707   170.5     3.5    17.4
- 9.00  -0.37  + 53.5    0.0  (4480)    16410  - 6.82  +0.98  + 27.6  - 7.5
1991 04 14    11 47.09   +05 22.0    1.818    2.742   151.7    10.0    17.8

1991 03 15    12 13.42   -13 24.4    1.589    2.552   161.4     7.1    17.0
- 7.94  -0.41  + 41.3  + 9.2  1986 CG   15556  - 5.80  +1.00  + 64.7  - 1.9
1991 04 14    11 50.20   -10 24.9    1.656    2.607   156.6     8.8    17.2

1991 03 15    12 14.05   +03 17.2    1.340    2.326   170.4     4.1    15.3
- 7.71  -0.60  + 84.0  + 1.7  (4302)    15678  - 6.05  +1.07  + 52.6  -10.7
1991 04 14    11 50.32   +07 05.1    1.353    2.285   151.5    12.1    15.7

1991 03 15    12 15.53   +00 22.4    1.772    2.756   169.7     3.7    17.8
- 8.89  -0.53  + 61.1  + 2.5  1985 UJ3  13475  - 7.58  +0.90  + 46.4  - 6.8
1991 04 14    11 48.19   +03 20.9    1.778    2.710   152.9     9.7    18.0

1991 03 15    12 16.18   +15 38.6    2.202    3.169   163.6     5.1    17.1
- 7.62  -0.35  + 77.1  - 5.1  1979 KG   13447  - 6.24  +0.75  + 25.8  -10.4
1991 04 14    11 53.35   +18 22.7    2.303    3.173   144.5    10.6    17.5

1991 03 15    12 24.68   -44 50.1    0.992    1.809   131.3    24.4    17.4
-14.55  -1.94  -142.3  +29.7  1988 BJ   16581  -13.59  +2.31  + 48.1  +25.8
1991 04 14    11 34.50   -47 04.4    0.959    1.814   135.2    22.9    17.3

1991 03 15    12 22.38   -51 05.3    2.298    2.986   125.3    15.8    16.5
-12.14  -1.10  - 63.4  +17.4  1990 BQ1  17209  -12.11  +1.15  + 46.1  +16.0
1991 04 14    11 41.82   -51 28.7    2.174    2.945   132.5    14.5    16.3

1991 03 15    12 17.54   -03 26.9    2.014    2.993   167.9     4.0    17.3
- 7.33  -0.40  + 45.1  + 3.4  1981 EV26 11043  - 6.12  +0.75  + 41.5  - 4.3
1991 04 14    11 55.24   -01 02.9    2.050    2.996   156.3     7.7    17.5
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1991 03 15    12 19.47   -03 28.1    2.071    3.049   167.4     4.1    17.9
- 7.36  -0.40  + 44.1  + 3.2  1981 EL24 11043  - 6.21  +0.73  + 40.5  - 4.2
1991 04 14    11 57.01   -01 07.5    2.113    3.060   156.7     7.4    18.1

1991 03 15    12 16.72   -05 47.7    4.302    5.275   166.7     2.5    17.1
- 4.49  -0.18  + 33.0  + 2.1  1973 SQ1  14343  - 4.02  +0.32  + 34.9  - 1.4
1991 04 14    12 03.04   -03 59.4    4.323    5.272   159.0     3.9    17.1

1991 03 15    12 21.99   +00 04.1    1.919    2.899   168.1     4.1    18.3
- 8.66  -0.51  + 58.2  + 2.2  (4481)    16411  - 7.59  +0.81  + 44.6  - 6.2
1991 04 14    11 55.19   +02 54.0    1.943    2.881   154.7     8.6    18.5

1991 03 15    12 22.33   -05 34.3    1.894    2.868   165.7     4.9    16.9
- 7.86  -0.49  + 31.8  + 4.4  (4294)    15547  - 6.81  +0.79  + 35.5  - 3.2
1991 04 14    11 57.96   -03 39.2    1.915    2.869   157.7     7.6    17.0

1991 03 15    12 24.28   +14 30.6    1.980    2.946   163.1     5.6    15.3
- 8.43  -0.39  + 50.0  - 5.5  (4352)    15696  - 6.84  +0.84  -  0.3  - 9.6
1991 04 14    11 59.11   +15 52.6    2.105    2.998   147.3    10.4    15.7

1991 03 15    12 24.38   -00 10.1    2.296    3.274   167.5     3.8    17.4
- 6.62  -0.44  + 48.6  + 2.1  (4474)    16408  - 6.12  +0.59  + 39.6  - 4.8
1991 04 14    12 03.37   +02 14.9    2.283    3.229   156.8     7.0    17.6

1991 03 15    12 27.72   -09 36.9    1.681    2.645   162.1     6.6    17.5
- 8.98  -0.58  + 48.8  + 7.3  1987 BC2  15414  - 7.73  +0.92  + 62.4  - 3.1
1991 04 14    11 59.87   -06 30.8    1.717    2.676   158.8     7.8    17.7

1991 03 15    12 30.54   -12 32.3    1.987    2.940   159.6     6.8    17.2
- 9.22  -0.60  +  3.0  + 7.0  1980 RU   15878  - 8.60  +0.78  + 28.5  + 0.7
1991 04 14    12 01.27   -11 33.3    1.985    2.944   159.2     6.9    17.2

1991 03 15    12 27.87   +04 19.3    1.433    2.412   166.8     5.4    16.6
- 6.89  -0.72  + 89.3  + 1.6  1979 KD   11836  - 6.33  +0.88  + 57.3  -11.0
1991 04 14    12 05.08   +08 22.5    1.425    2.366   153.6    10.9    16.8

1991 03 15    12 25.43   +01 54.1    4.402    5.377   167.5     2.3    17.1
- 4.46  -0.20  + 32.4  + 0.4  1973 SH1  17197  - 4.16  +0.29  + 24.7  - 2.7
1991 04 14    12 11.59   +03 25.4    4.448    5.391   157.9     4.0    17.3

1991 03 15    12 28.38   -16 55.7    4.519    5.445   156.5     4.2    17.1
- 4.96  -0.23  + 10.7  + 4.0  (4543)    16571  - 4.76  +0.29  + 27.2  + 1.2
1991 04 14    12 12.85   -15 53.6    4.500    5.458   161.1     3.4    17.1

1991 03 15    12 31.79   -13 41.2    2.158    3.105   158.5     6.7    15.8
- 6.49  -0.48  + 53.5  + 7.6  (4431)    16215  - 5.94  +0.62  + 74.7  - 1.1
1991 04 14    12 11.12   -10 13.0    2.168    3.136   161.7     5.8    15.8

1991 03 15    12 33.56   -00 45.7    1.786    2.759   165.1     5.3    17.1
- 7.71  -0.60  + 72.1  + 3.0  (4434)    16216  - 7.13  +0.76  + 58.5  - 7.0
1991 04 14    12 08.80   +02 48.6    1.812    2.766   157.7     7.9    17.3

1991 03 15    12 32.04   -02 46.5    2.781    3.750   164.9     4.0    17.5
- 6.54  -0.39  + 40.8  + 2.3  1982 PR   13856  - 6.22  +0.48  + 37.9  - 3.2
1991 04 14    12 11.31   -00 38.2    2.796    3.753   159.9     5.3    17.5

1991 03 15    12 35.81   -07 43.9    1.615    2.578   161.7     6.9    17.8
- 8.50  -0.69  + 55.0  + 6.8  1982 RO1  17014  - 7.86  +0.86  + 63.9  - 4.0
1991 04 14    12 08.40   -04 25.5    1.630    2.597   160.5     7.4    17.9
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1991 03 15    12 35.62   -02 18.1    1.835    2.804   164.2     5.5    18.0
- 8.15  -0.68  + 47.0  + 3.7  1973 SR3  14943  - 8.03  +0.71  + 42.7  - 5.0
1991 04 14    12 08.76   +00 12.5    1.809    2.768   158.9     7.5    18.0

1991 03 15    12 33.30   -19 27.3    4.334    5.244   153.7     4.8    17.1
- 4.66  -0.26  + 17.0  + 4.7  1986 TR6  15067  - 4.59  +0.28  + 37.3  + 1.6
1991 04 14    12 18.43   -18 00.2    4.293    5.253   161.5     3.5    17.1

1991 03 15    12 38.76   +03 17.7    1.762    2.733   164.2     5.7    17.0
- 8.23  -0.66  + 61.2  + 0.7  (4312)    15681  - 7.81  +0.77  + 36.7  - 8.0
1991 04 14    12 12.06   +06 00.6    1.794    2.743   156.5     8.4    17.1

1991 03 15    12 32.88   -19 53.5    4.765    5.672   153.4     4.5    18.1
- 4.28  -0.23  + 30.1  + 4.5  1987 YU1  16428  - 4.17  +0.25  + 48.8  + 1.4
1991 04 14    12 19.32   -17 49.2    4.726    5.687   161.7     3.2    18.0

1991 03 15    12 41.17   -01 39.6    1.413    2.382   163.0     7.0    17.1
- 8.90  -0.95  + 27.2  + 3.5  1974 OE   10612  - 9.15  +0.88  + 20.9  - 5.5
1991 04 14    12 10.69   -00 10.6    1.377    2.343   159.5     8.6    17.1

1991 03 15    12 41.31   +00 56.6    2.106    3.072   163.5     5.3    17.9
- 8.84  -0.59  -  3.1  + 0.6  2574 P-L  12571  - 8.48  +0.68  - 12.6  - 3.5
1991 04 14    12 13.00   +00 40.7    2.136    3.096   159.6     6.5    18.0

1991 03 15    12 36.09   -08 22.6    3.065    4.019   161.3     4.5    17.1
- 5.49  -0.35  + 38.3  + 3.7  (4495)    16416  - 5.28  +0.40  + 45.2  - 1.5
1991 04 14    12 18.55   -06 07.8    3.088    4.059   163.3     4.1    17.2

1991 03 15    12 39.16   +01 28.2    1.643    2.613   164.1     6.0    16.6
- 6.51  -0.74  +109.8  + 3.8  1988 RT6  15417  - 6.69  +0.68  + 89.8  - 9.8
1991 04 14    12 16.74   +06 53.0    1.622    2.574   156.8     8.8    16.6

1991 03 15    12 38.09   +05 31.6    2.680    3.647   164.1     4.3    16.0
- 6.04  -0.44  + 61.0  - 0.1  (4405)    16015  - 6.02  +0.44  + 40.7  - 6.2
1991 04 14    12 18.38   +08 15.3    2.690    3.630   156.1     6.4    16.1

1991 03 15    12 40.58   -02 56.8    1.366    2.334   162.8     7.2    17.5
- 7.10  -0.94  + 64.7  + 6.1  1980 LU   15063  - 7.62  +0.80  + 63.2  - 6.8
1991 04 14    12 15.28   +00 38.8    1.309    2.278   160.2     8.6    17.4

1991 03 15    12 41.94   -20 55.8    1.827    2.741   151.4    10.0    15.6
- 8.22  -0.72  +  8.1  +11.2  1925 BA   15548  - 7.98  +0.77  + 57.4  + 3.6
1991 04 14    12 14.89   -19 03.6    1.825    2.790   160.2     7.0    15.5

1991 03 15    12 43.58   +00 10.5    1.552    2.519   162.8     6.7    16.9
- 9.01  -0.82  + 51.0  + 2.5  1989 US   15567  - 8.83  +0.85  + 35.5  - 7.1
1991 04 14    12 13.72   +02 38.1    1.564    2.525   158.8     8.3    17.0

1991 03 15    12 42.72   -16 39.8    2.013    2.942   154.5     8.4    16.6
- 8.04  -0.65  + 25.8  + 8.9  (4324)    16404  - 7.92  +0.67  + 59.8  + 1.3
1991 04 14    12 16.34   -14 17.4    2.004    2.975   162.4     5.9    16.5

1991 03 15    12 40.88   -05 01.5    1.848    2.810   162.0     6.3    16.9
- 6.67  -0.61  + 40.1  + 4.3  1978 VG5  15405  - 6.45  +0.65  + 41.3  - 3.8
1991 04 14    12 18.87   -02 44.3    1.874    2.846   162.4     6.1    17.0

1991 03 15    12 42.57   -09 44.4    1.803    2.755   159.2     7.4    17.5
- 7.56  -0.68  + 57.3  + 7.3  1989 WJ1  15724  - 7.46  +0.70  + 72.1  - 2.8
1991 04 14    12 17.48   -06 11.6    1.801    2.776   163.0     6.0    17.5
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1991 03 15    12 41.71   +01 11.3    2.010    2.976   163.4     5.5    16.4
- 7.24  -0.55  + 68.5  + 1.4  1989 WE   17209  - 6.88  +0.64  + 49.9  - 6.9
1991 04 14    12 18.32   +04 24.3    2.068    3.024   158.7     6.9    16.6

1991 03 15    12 42.49   -03 37.5    1.207    2.175   162.1     8.1    17.6
- 7.31  -1.01  + 34.6  + 5.5  2225 T-2  14966  - 7.64  +0.92  + 34.4  - 5.7
1991 04 14    12 16.48   -01 33.4    1.179    2.153   161.4     8.5    17.5

1991 03 15    12 43.31   -01 03.2    1.489    2.456   162.7     6.9    15.9
- 7.66  -0.74  + 48.6  + 2.8  1989 UR4  16584  - 7.20  +0.84  + 34.9  - 6.7
1991 04 14    12 18.11   +01 19.6    1.541    2.508   160.4     7.7    16.1

1991 03 15    12 44.10   +00 59.8    1.678    2.644   162.8     6.4    17.5
- 8.09  -0.74  + 75.7  + 2.4  (4278)    15542  - 7.97  +0.75  + 55.8  - 8.2
1991 04 14    12 17.26   +04 36.5    1.701    2.659   158.4     8.0    17.6

1991 03 15    12 38.51   -09 37.2    4.507    5.452   160.1     3.6    17.3
- 4.66  -0.26  + 15.1  + 2.6  1986 TS6  14351  - 4.69  +0.24  + 22.7  - 0.2
1991 04 14    12 23.55   -08 35.4    4.491    5.465   164.8     2.8    17.2

1991 03 15    12 38.67   +02 40.7    4.193    5.157   164.2     3.0    17.5
- 4.67  -0.27  + 25.3  + 0.2  1973 SR1  16421  - 4.66  +0.26  + 16.9  - 2.9
1991 04 14    12 23.71   +03 49.8    4.213    5.167   160.1     3.8    17.5

1991 03 15    12 44.17   -05 34.0    1.532    2.493   161.0     7.5    16.9
- 7.22  -0.92  + 67.5  + 7.4  (4391)    16010  - 8.07  +0.69  + 77.3  - 4.8
1991 04 14    12 18.28   -01 34.1    1.452    2.425   161.8     7.4    16.8

1991 03 15    12 47.14   +08 14.0    1.879    2.839   161.3     6.4    17.1
- 8.96  -0.66  + 32.4  - 2.3  1931 VS   15548  - 8.59  +0.74  -  1.8  - 7.9
1991 04 14    12 18.20   +09 10.0    1.937    2.880   155.4     8.3    17.2

1991 03 15    12 48.74   -00 19.2    1.822    2.783   161.5     6.5    17.9
- 8.17  -0.71  + 54.6  + 2.4  1978 VE15 15405  - 8.18  +0.69  + 41.6  - 6.3
1991 04 14    12 21.63   +02 21.1    1.848    2.814   160.6     6.8    17.9

1991 03 15    12 48.54   -02 23.8    1.403    2.366   161.1     7.8    16.6
- 7.06  -1.03  + 62.3  + 5.8  1988 RR2  15068  - 8.29  +0.69  + 60.8  - 6.6
1991 04 14    12 22.35   +01 04.0    1.324    2.297   161.5     8.0    16.4

1991 03 15    12 50.19   -05 44.2    1.501    2.458   159.6     8.1    17.4
- 8.17  -0.93  + 56.5  + 6.5  1976 SM2  15550  - 8.73  +0.76  + 62.4  - 4.9
1991 04 14    12 21.69   -02 24.6    1.476    2.452   163.0     6.9    17.3

1991 03 15    12 48.93   +00 01.2    1.694    2.655   161.5     6.8    17.3
- 7.35  -0.72  + 71.8  + 2.5  1989 UZ4  15720  - 7.33  +0.70  + 54.1  - 7.7
1991 04 14    12 24.31   +03 28.7    1.737    2.702   160.4     7.1    17.4

1991 03 15    12 50.61   -10 05.5    1.462    2.411   157.4     9.1    17.3
- 7.65  -1.04  + 38.4  + 8.9  1988 MG   13458  - 8.85  +0.70  + 64.7  - 1.5
1991 04 14    12 22.65   -07 11.7    1.382    2.364   164.5     6.5    17.0

1991 03 15    12 53.67   -00 38.3    1.819    2.775   160.2     7.0    17.5
- 8.93  -0.75  + 26.0  + 2.0  1985 TM1  15412  - 8.98  +0.71  + 16.5  - 4.8
1991 04 14    12 24.11   +00 38.0    1.854    2.826   162.1     6.3    17.5

1991 03 15    12 54.15   -04 08.2    1.465    2.420   159.2     8.4    17.8
- 8.75  -0.99  + 48.9  + 5.4  1989 SD   15421  - 9.37  +0.79  + 49.1  - 5.4
1991 04 14    12 23.67   -01 21.2    1.451    2.428   163.0     7.0    17.7
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1991 03 15    12 48.73   -11 01.4    2.771    3.708   157.2     6.0    17.5
- 6.16  -0.50  + 30.8  + 5.0  1982 SE1  14017  - 6.53  +0.38  + 45.7  - 0.4
1991 04 14    12 28.06   -08 56.8    2.732    3.713   165.9     3.8    17.3

1991 03 15    12 52.99   +10 34.9    1.379    2.335   159.2     8.7    15.2
- 7.80  -1.05  + 66.4  - 2.6  (4353)    15696  - 8.75  +0.77  + 13.4  -13.2
1991 04 14    12 24.78   +12 54.2    1.357    2.298   153.5    11.2    15.3

1991 03 15    12 51.16   +02 21.9    1.915    2.873   161.1     6.4    17.7
- 7.04  -0.73  + 65.3  + 1.7  1989 YP5  16878  - 7.60  +0.56  + 46.9  - 7.3
1991 04 14    12 26.82   +05 26.9    1.900    2.862   159.6     7.0    17.7

1991 03 15    12 50.14   -05 31.4    2.489    3.439   159.6     5.8    17.1
- 5.98  -0.58  + 39.5  + 3.9  1975 RP   13584  - 6.62  +0.38  + 44.7  - 2.4
1991 04 14    12 29.46   -03 13.6    2.423    3.402   165.1     4.4    16.9

1991 03 15    12 53.41   -08 03.5    1.364    2.315   157.8     9.3    16.5
- 6.68  -1.09  + 41.3  + 8.4  1980 NB   14186  - 8.27  +0.65  + 61.9  - 2.7
1991 04 14    12 27.76   -05 08.3    1.275    2.259   165.3     6.5    16.2

1991 03 15    12 55.30   -13 02.4    1.613    2.548   154.7     9.6    18.1
- 8.06  -0.86  + 40.7  + 9.1  (4279)    15542  - 8.39  +0.74  + 67.7  - 1.0
1991 04 14    12 27.68   -10 01.1    1.621    2.605   165.8     5.4    18.0

1991 03 15    12 48.28   +14 06.3    4.141    5.080   158.7     4.1    17.5
- 4.70  -0.32  + 32.2  - 2.2  1989 BB1  16234  - 4.96  +0.24  +  8.9  - 5.2
1991 04 14    12 32.76   +15 13.4    4.152    5.063   152.6     5.2    17.5

1991 03 15    13 06.26   -26 21.7    1.243    2.127   143.6    16.1    16.9
-11.59  -1.75  - 86.2  +14.3  1988 EC   15068  -14.64  +0.96  + 14.2  +14.8
1991 04 14    12 21.88   -28 10.9    1.170    2.124   155.7    11.2    16.6

1991 03 15    12 58.34   +00 45.2    1.806    2.758   159.2     7.4    17.5
- 8.06  -0.84  + 58.9  + 2.3  1982 UE   15554  - 8.82  +0.60  + 43.9  - 6.9
1991 04 14    12 30.35   +03 36.5    1.800    2.769   161.5     6.6    17.4

1991 03 15    12 58.51   -02 08.5    1.848    2.798   158.7     7.4    18.1
- 7.33  -0.83  + 50.0  + 3.6  1981 US14 15881  - 8.32  +0.53  + 45.5  - 5.1
1991 04 14    12 32.52   +00 30.9    1.814    2.791   163.9     5.7    18.0

1991 03 15    12 56.67   +01 01.3    2.438    3.388   159.7     5.9    17.5
- 6.66  -0.60  + 29.7  + 1.1  1976 QL2  14185  - 7.24  +0.41  + 19.3  - 4.3
1991 04 14    12 33.97   +02 25.0    2.432    3.404   163.0     5.0    17.5

1991 03 15    12 57.07   -03 16.2    2.259    3.206   158.8     6.4    17.2
- 6.36  -0.66  + 43.2  + 3.3  1988 TP1  16029  - 7.18  +0.41  + 42.5  - 3.6
1991 04 14    12 34.77   -00 54.8    2.220    3.199   165.1     4.6    17.1

1991 03 15    12 58.42   -22 17.2    1.721    2.617   147.9    11.7    16.4
- 6.28  -1.00  + 27.1  +12.9  (4399)    16013  - 8.06  +0.50  + 91.3  + 6.1
1991 04 14    12 34.14   -19 07.2    1.583    2.562   164.0     6.2    15.9

1991 03 15    13 00.35   -03 42.4    1.747    2.694   157.9     8.0    17.9
- 7.42  -0.87  + 71.8  + 5.1  1982 SV5  13605  - 8.40  +0.57  + 69.9  - 5.8
1991 04 14    12 33.95   +00 10.3    1.725    2.704   164.4     5.7    17.7

1991 03 15    13 01.07   -21 33.0    1.879    2.773   148.0    11.0    17.7
- 7.48  -0.82  + 84.2  +13.0  (4388)    16009  - 8.08  +0.61  +132.2  + 1.2
1991 04 14    12 35.10   -15 46.6    1.844    2.828   166.0     4.9    17.4
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1991 03 15    12 58.52   +04 19.8    2.029    2.980   159.2     6.8    17.0
- 5.43  -0.73  + 80.5  + 1.5  5041 T-3  16039  - 6.52  +0.40  + 59.0  - 8.1
1991 04 14    12 38.50   +08 06.9    1.992    2.952   159.4     6.9    17.0

1991 03 15    13 04.80   -07 05.5    1.510    2.450   155.7     9.6    17.1
- 8.23  -1.07  + 24.1  + 6.1  (4329)    15687  - 9.60  +0.66  + 36.6  - 2.5
1991 04 14    12 34.86   -05 18.5    1.480    2.467   167.0     5.2    16.8

1991 03 15    13 00.47   -03 18.5    1.903    2.849   157.9     7.5    17.3
- 6.22  -0.76  + 91.4  + 4.8  (4504)    16419  - 7.09  +0.49  + 86.0  - 6.5
1991 04 14    12 38.21   +01 28.4    1.897    2.875   164.4     5.4    17.2

1991 03 15    12 54.80   -01 44.8    4.333    5.277   159.7     3.7    17.1
- 3.96  -0.31  + 37.6  + 1.4  1989 AN2  16583  - 4.37  +0.18  + 35.1  - 2.1
1991 04 14    12 41.39   +00 10.7    4.308    5.286   165.8     2.7    17.1

1991 03 15    13 03.94   -13 53.0    1.820    2.741   152.5     9.6    17.0
- 7.79  -0.87  + 20.7  + 8.1  1989 SK   15421  - 8.68  +0.59  + 50.2  + 0.7
1991 04 14    12 36.56   -11 53.0    1.811    2.799   167.7     4.4    16.9

1991 03 15    13 02.37   -05 10.4    1.162    2.113   156.9    10.6    16.0
- 6.03  -1.28  + 57.8  + 8.2  1984 EM   10041  - 8.32  +0.65  + 67.5  - 5.9
1991 04 14    12 37.27   -01 36.3    1.087    2.074   166.0     6.7    15.7

1991 03 15    13 05.49   -04 30.0    1.381    2.327   156.4     9.8    16.5
- 6.97  -1.14  + 63.6  + 6.7  (4519)    16562  - 8.79  +0.61  + 66.9  - 6.0
1991 04 14    12 38.62   -00 50.9    1.333    2.319   165.9     6.0    16.2

1991 03 15    13 05.59   +13 23.6    2.122    3.054   155.3     7.8    17.5
- 7.11  -0.81  + 60.7  - 2.9  1975 TK6  15402  - 8.38  +0.42  + 17.3  -10.3
1991 04 14    12 40.09   +15 34.4    2.098    3.027   153.1     8.6    17.5

1991 03 15    13 04.30   -05 08.2    2.163    3.101   156.5     7.3    17.7
- 6.02  -0.74  + 45.8  + 4.3  1981 EW24 15880  - 7.24  +0.37  + 50.3  - 3.1
1991 04 14    12 42.37   -02 30.3    2.107    3.094   167.6     4.0    17.4

1991 03 15    13 05.51   +07 47.7    2.202    3.141   157.0     7.1    17.7
- 6.68  -0.70  + 83.7  - 0.8  1989 YP   16031  - 7.52  +0.43  + 51.1  - 9.1
1991 04 14    12 42.12   +11 25.2    2.237    3.184   157.0     7.1    17.8

1991 03 15    13 03.73   -05 27.8    2.072    3.010   156.5     7.6    18.5
- 5.46  -0.75  + 73.5  + 5.4  1981 EP27  9962  - 6.69  +0.37  + 78.2  - 4.1
1991 04 14    12 43.45   -01 22.7    2.019    3.005   167.2     4.2    18.2

1991 03 15    13 08.55   -12 26.9    1.667    2.589   152.4    10.2    18.3
- 6.96  -1.01  + 48.0  + 9.1  1982 UF2  15707  - 8.69  +0.50  + 77.3  - 0.6
1991 04 14    12 42.28   -09 01.0    1.603    2.595   169.4     4.1    18.0

1991 03 15    13 09.41   -05 50.2    1.070    2.016   155.1    12.0    17.1
- 6.06  -1.42  + 44.6  + 8.3  6787 P-L   9303  - 8.86  +0.65  + 56.7  - 5.3
1991 04 14    12 43.20   -02 53.1    1.006    1.998   168.0     6.0    16.7

1991 03 15    13 10.35   -13 09.9    2.189    3.101   151.6     8.8    15.7
- 6.99  -0.87  -  4.5  + 5.9  1988 VD1  14026  - 8.85  +0.32  + 21.7  + 1.9
1991 04 14    12 44.40   -12 36.7    2.083    3.074   169.4     3.5    15.3

1991 03 15    13 13.21   -07 12.8    1.627    2.557   153.7     9.9    17.0
- 8.06  -1.07  + 26.0  + 5.8  (4296)    15676  - 9.83  +0.55  + 38.4  - 2.3
1991 04 14    12 43.39   -05 21.3    1.590    2.582   169.1     4.2    16.7
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1991 03 15    13 14.17   -03 03.9    1.606    2.540   154.7     9.6    18.2
- 8.16  -1.09  + 37.8  + 4.2  5565 P-L  15905  -10.00  +0.55  + 36.2  - 4.8
1991 04 14    12 43.89   -00 56.3    1.572    2.559   167.0     5.1    17.9

1991 03 15    13 12.61   +09 51.0    1.339    2.279   154.8    10.7    16.0
- 6.87  -1.29  + 78.0  - 0.8  1975 TH6  13463  - 9.58  +0.52  + 28.5  -14.2
1991 04 14    12 44.58   +12 55.6    1.278    2.231   155.9    10.6    15.9

1991 03 15    13 11.02   +00 25.4    1.560    2.502   156.0     9.3    16.1
- 6.28  -1.02  + 37.8  + 2.4  (4325)    15686  - 8.08  +0.49  + 24.4  - 6.5
1991 04 14    12 46.68   +02 15.0    1.531    2.514   165.3     5.8    15.9

1991 03 15    13 12.12   -14 37.7    2.318    3.220   150.5     8.7    17.4
- 7.00  -0.78  -  0.1  + 6.3  (4430)    16215  - 8.37  +0.36  + 27.2  + 2.0
1991 04 14    12 46.97   -13 49.1    2.271    3.263   169.5     3.2    17.1

1991 03 15    13 10.04   -03 07.5    2.205    3.138   155.7     7.5    17.7
- 5.89  -0.76  + 46.3  + 3.5  1978 RZ   14945  - 7.32  +0.32  + 45.7  - 3.8
1991 04 14    12 48.22   -00 36.0    2.150    3.137   167.6     3.9    17.5

1991 03 15    13 15.41   -12 40.7    2.037    2.945   150.8     9.5    18.4
- 7.49  -0.99  -  3.8  + 6.1  1984 SC1  14019  - 9.83  +0.31  + 23.4  + 1.9
1991 04 14    12 47.02   -12 03.6    1.918    2.911   170.1     3.4    18.0

1991 03 15    13 11.51   -17 56.7    2.072    2.967   148.6    10.0    17.5
- 5.64  -0.87  + 41.6  + 9.7  1988 VT   14954  - 7.55  +0.31  + 83.4  + 2.8
1991 04 14    12 49.53   -14 36.7    1.948    2.940   169.6     3.5    17.1

1991 03 15    13 14.43   -00 57.5    1.530    2.467   155.0     9.8    16.0
- 6.62  -1.05  + 39.6  + 3.0  1989 WF   15722  - 8.42  +0.51  + 29.8  - 6.1
1991 04 14    12 48.97   +01 03.5    1.517    2.503   166.6     5.3    15.8

1991 03 15    13 07.04   -21 17.8    4.488    5.351   147.2     5.8    17.9
- 4.39  -0.39  +  3.0  + 4.6  5493 T-2  16884  - 5.21  +0.14  + 25.5  + 2.5
1991 04 14    12 51.67   -20 31.4    4.373    5.351   165.9     2.6    17.6

1991 03 15    13 13.97   -07 50.3    2.050    2.972   153.3     8.6    16.9
- 5.74  -0.81  + 32.4  + 5.0  6582 P-L  11844  - 7.22  +0.35  + 42.9  - 1.9
1991 04 14    12 52.41   -05 44.7    2.022    3.018   171.3     2.9    16.7

1991 03 15    13 17.83   -27 33.7    2.067    2.908   141.0    12.4    17.5
- 7.01  -1.01  -  9.2  +11.3  1982 BS   10529  - 9.16  +0.38  + 54.6  + 8.1
1991 04 14    12 51.02   -26 19.9    1.974    2.940   160.8     6.4    17.2

1991 03 15    13 17.23   -14 15.5    1.146    2.066   149.6    14.1    16.6
- 5.96  -1.40  + 32.1  +12.2  1986 WB1  12001  - 8.71  +0.61  + 76.4  + 0.4
1991 04 14    12 51.51   -11 11.1    1.105    2.102   171.4     4.1    16.2

1991 03 15    13 10.72   -28 34.2    4.763    5.573   141.3     6.4    17.1
- 4.58  -0.42  -  8.7  + 5.3  1989 DJ   16432  - 5.52  +0.12  + 20.5  + 4.0
1991 04 14    12 54.59   -28 14.3    4.628    5.577   159.4     3.6    16.9

1991 03 15    13 18.84   +04 08.3    1.533    2.466   154.2    10.1    16.0
- 6.90  -1.10  + 60.6  + 0.9  1983 AN   11843  - 8.88  +0.50  + 32.4  - 9.4
1991 04 14    12 52.21   +06 46.8    1.528    2.502   162.3     7.0    15.9

1991 03 15    13 18.03   -08 59.7    1.802    2.720   151.9     9.9    17.7
- 5.02  -0.97  + 24.3  + 6.1  5557 P-L   9301  - 7.35  +0.28  + 41.9  - 1.0
1991 04 14    12 57.15   -07 07.5    1.714    2.712   172.9     2.6    17.3
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1991 03 15    13 29.10   -41 56.1    2.248    2.971   128.5    15.2    18.5
- 7.97  -1.29  - 37.7  +13.4  1990 BJ   16238  -11.36  +0.32  + 53.9  +14.8
1991 04 14    12 57.11   -41 34.6    2.100    2.990   146.8    10.6    18.2

1991 03 15    13 24.90   -06 59.9    1.661    2.576   151.0    10.8    18.3
- 5.89  -1.15  + 61.8  + 7.4  1977 EG7  12581   - 8.96  +0.26  + 77.5  - 3.2
1991 04 14    13 00.03   -03 11.6    1.552    2.548   171.5     3.3    17.8

1991 03 15    13 17.21   -06 06.7    4.777    5.682   153.1     4.5    18.1
- 3.80  -0.37  + 20.4  + 1.9  9507 P-L  13303   - 4.69  +0.08  + 24.1  - 0.8
1991 04 14    13 03.66   -04 55.1    4.682    5.679   173.3     1.2    17.8

1991 03 15    13 27.52   -11 50.3    2.206    3.098   148.6     9.6    17.0
- 6.75  -0.89  +  5.2  + 5.5  (4367)    15865   - 8.76  +0.28  + 26.4  + 0.9
1991 04 14    13 02.11   -10 54.5    2.160    3.159   174.0     1.9    16.6

1991 03 15    13 17.96   -07 50.4    4.536    5.437   152.4     4.9    17.9
- 3.54  -0.38  + 35.9  + 2.5  1973 SY   16693   - 4.47  +0.09  + 41.9  - 0.7
1991 04 14    13 05.09   -05 47.8    4.445    5.444   174.1     1.1    17.6

1991 03 15    13 24.01   -02 59.4    2.945    3.853   152.3     6.9    17.8
- 5.32  -0.65  + 41.7  + 2.6  1977 TS3  14012   - 6.94  +0.14  + 41.8  - 2.7
1991 04 14    13 04.17   -00 44.3    2.861    3.853   170.3     2.5    17.5

1991 03 15    13 24.16   -07 15.3    2.691    3.594   151.1     7.7    18.1
- 5.26  -0.69  + 36.8  + 3.9  (4463)    16404   - 6.91  +0.18  + 44.9  - 1.5
1991 04 14    13 04.29   -05 02.6    2.627    3.626   173.6     1.8    17.7

1991 03 15    13 27.93   -09 32.2    1.505    2.415   149.5    12.1    17.2
- 5.26  -1.28  + 28.9  + 7.7  2200 T-2  15571   - 9.07  +0.19  + 54.7  - 0.5
1991 04 14    13 03.73   -07 11.7    1.372    2.372   174.4     2.3    16.6

1991 03 15    13 33.27   -06 27.0    1.576    2.483   149.2    11.8    17.7
- 6.21  -1.31  + 21.8  + 5.6  (4392)    16010  -10.15  +0.17  + 35.1  - 2.0
1991 04 14    13 06.01   -04 47.7    1.450    2.450   173.7     2.6    17.0

1991 03 15    13 28.23   +04 10.9    2.162    3.075   151.8     8.8    16.7
- 5.22  -0.86  + 60.2  + 1.0  1978 TA7  15876   - 7.38  +0.20  + 41.0  - 7.0
1991 04 14    13 07.37   +06 57.5    2.120    3.094   163.5     5.3    16.5

1991 03 15    13 33.95   +01 13.7    1.339    2.258   150.4    12.6    16.7
- 4.85  -1.34  + 86.4  + 4.3  1975 XJ   11991   - 8.55  +0.26  + 68.2  -10.2
1991 04 14    13 10.89   +05 32.5    1.288    2.272   165.1     6.5    16.4

1991 03 15    13 31.62   -08 22.2    2.570    3.461   149.0     8.5    17.3
- 5.18  -0.77  + 29.3  + 4.3  1989 YZ1  16238   - 7.23  +0.14  + 40.5  - 0.9
1991 04 14    13 11.34   -06 27.9    2.491    3.492   175.8     1.2    16.9

1991 03 15    13 36.28   -10 33.2    1.411    2.310   147.2    13.5    16.9
- 5.23  -1.37  + 42.0  + 8.9  (4330)    15688   - 9.26  +0.21  + 70.7  - 0.9
1991 04 14    13 11.63   -07 25.9    1.315    2.317   176.4     1.6    16.2

1991 03 15    13 35.02   -12 59.8    1.346    2.243   146.5    14.2    16.6
- 4.16  -1.40  + 23.3  + 9.7  1188 T-2  15077   - 8.55  +0.14  + 62.8  + 1.6
1991 04 14    13 13.11   -10 35.9    1.229    2.231   176.6     1.5    15.9

1991 03 15    13 40.34   -13 32.4    1.989    2.861   145.1    11.5    17.9
- 6.29  -1.06  + 14.5  + 6.8  4018 P-L  15570   - 9.21  +0.19  + 42.3  + 1.5
1991 04 14    13 14.78   -11 57.4    1.919    2.921   176.1     1.4    17.4
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1991 03 15    13 47.98   -32 37.5    2.153    2.921   132.8    14.5    17.8
- 8.08  -1.32  - 52.7  +10.5  1989 RZ   15895  -12.11  +0.15  + 20.8  +12.0
1991 04 14    13 14.95   -33 28.3    2.048    2.989   155.4     8.0    17.5

1991 03 15    13 39.64   -16 39.6    2.232    3.090   143.8    11.0    17.8
- 5.67  -1.06  -  1.4  + 6.7  1931 TC2  12578  - 9.29  -0.01  + 33.7  + 3.9
1991 04 14    13 15.26   -15 46.3    2.036    3.034   172.8     2.4    17.2

1991 03 15    13 37.84   -06 55.6    1.773    2.669   148.0    11.4    18.5
- 4.56  -1.12  + 42.9  + 6.0  1988 RU3  16028  - 8.08  +0.09  + 56.5  - 2.3
1991 04 14    13 16.67   -04 11.1    1.657    2.657   174.8     2.0    17.9

1991 03 15    13 39.75   -04 43.7    1.882    2.776   148.1    10.9    17.2
- 5.32  -1.13  + 42.7  + 5.0  1988 RA5  14953  - 9.02  +0.04  + 50.9  - 3.0
1991 04 14    13 16.06   -02 08.6    1.739    2.737   172.9     2.6    16.6

1991 03 15    13 39.30   -21 21.2    2.364    3.201   141.4    11.2    17.8
- 5.53  -0.97     0.0  + 7.8  1989 YH   15899  - 8.50  +0.08  + 42.4  + 5.1
1991 04 14    13 16.32   -20 12.8    2.225    3.214   168.5     3.6    17.3

1991 03 15    13 39.76   -01 15.0    2.142    3.036   148.7     9.8    16.9
- 5.43  -0.98  + 55.4  + 3.4  (4382)    15870  - 8.41  +0.09  + 52.2  - 4.7
1991 04 14    13 17.04   +01 41.4    2.040    3.030   169.2     3.6    16.5

1991 03 15    13 38.69   -10 54.0    2.064    2.945   146.5    10.7    17.0
- 4.67  -0.99  + 29.1  + 6.2  1133 T-2  15076  - 7.72  +0.08  + 50.4  + 0.1
1991 04 14    13 18.13   -08 43.7    1.949    2.952   178.3     0.6    16.4

1991 03 15    13 44.83   -14 39.2    1.785    2.652   143.6    12.9    18.0
- 6.03  -1.29  +  7.7  + 7.7  1935 SC   14181  -10.32  +0.04  + 44.5  + 3.2
1991 04 14    13 17.86   -13 12.7    1.636    2.637   175.4     1.8    17.4

1991 03 15    13 32.93   -16 36.0    4.252    5.101   145.2     6.4    18.5
- 3.46  -0.47  + 18.8  + 4.0  5187 T-2  16883  - 4.88  +0.03  + 36.5  + 1.5
1991 04 14    13 19.49   -15 08.6    4.110    5.108   173.6     1.2    18.1

1991 03 15    13 35.01   +18 05.0    4.465    5.325   146.9     5.9    16.3
- 3.83  -0.46  + 39.9  - 2.3  (4489)    16414  - 5.14  +0.04  + 14.6  - 5.8
1991 04 14    13 20.63   +19 33.2    4.437    5.339   151.5     5.1    16.3

1991 03 15    13 42.47   -17 05.1    2.499    3.347   143.0    10.3    16.7
- 5.31  -0.91  -  3.1  + 6.0  (4593)    17002  - 8.22  +0.03  + 27.6  + 3.3
1991 04 14    13 20.45   -16 23.4    2.361    3.358   172.5     2.2    16.2

1991 03 15    13 45.69   -15 53.0    1.718    2.581   142.9    13.4    17.5
- 5.33  -1.31  + 18.4  + 8.9  1982 TD2  15882  - 9.77  +0.01  + 61.1  + 3.7
1991 04 14    13 20.61   -13 44.2    1.565    2.566   175.1     1.9    16.8

1991 03 15    13 35.74   -07 30.5    4.165    5.038   148.3     5.9    17.5
- 3.83  -0.49  + 12.9  + 2.3  1973 SW1  14942  - 5.30  +0.02  + 18.9  - 0.4
1991 04 14    13 21.11   -06 38.0    4.044    5.046   177.5     0.5    17.1

1991 03 15    13 41.72   -11 32.2    2.583    3.449   145.6     9.4    17.4
- 4.59  -0.82  + 24.4  + 5.1  (4454)    16224  - 7.18  +0.04  + 43.0  + 0.5
1991 04 14    13 22.48   -09 42.8    2.461    3.464   179.0     0.3    16.7

1991 03 15    13 42.50   -10 12.9    2.273    3.146   145.9    10.2    17.4
- 4.54  -0.94  + 20.4  + 5.2  1982 SM7  16577  - 7.62  +0.01  + 38.5  + 0.2
1991 04 14    13 22.50   -08 35.5    2.135    3.137   179.3     0.2    16.7
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