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EDITORIAL NOTICE.

The next MPCs will be published on or about 1991 Jan. 30. No MPCs will be issued in late December.

L. D. Schmadel, on behalf of IAU Commission 20's Study Group on the Origin of Minor Planet Names, informs us that the Study Group is planning to publish a "Dictionary of Minor Planet Names" around the middle of 1991. In order to make this publication as complete and up-to-date as possible, discoverers and others eligible to propose names for new objects are urged to do so during the next few months. By way of encouragement the Commission plans to invoke the resolution, adopted in 1979, that if the discoverer does not exercise his established right within ten years of the numbering of a minor planet, that right will be lost. Accordingly, discoverers' naming rights for minor planets (2377) and earlier will expire on 1991 May 1.

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CORRECTED OBSERVATIONS.

The following observations correct those previously published.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Mag.	N	Obs.
1955 BG	1988 11	12.54653	01 55 10.50	-08 48 49.9	MPC13992		1	894
1955 BG	1988 11	12.58576	01 55 08.48	-08 48 37.5	MPC13992		1	894
1988 PY	1988 10	07.23073	22 22 45.90	-04 55 21.6	MPC17071	17.5		675
1988 SM	1988 10	09.18003	22 24 26.94	-03 23 59.6	MPC15326			675
1990 SY3 *	1990 09	22.31233	00 42 48.18	+26 15 39.7	MPC17121	16.5	2	675
26	1958 10	05.90169	23 23 30.48	-08 24 30.7	MPC 2009	11.0	3	024
32	1974 08	21.87086	22 17 55.03	-01 58 51.8	MPC 5151			073
34	1952 05	17.9583	14 04 47.03	-07 07 18.6	MPC 800			990
37	1935 04	30.93443	14 38 28.13	-18 08 57.0	MPC 3203			020
37	1935 04	30.97451	14 38 26.64	-18 08 51.3	MPC 3203			020
37	1940 06	30.971	18 11 54	-28 02.5	RI 2180			006
37	1958 10	05.90169	23 18 27.60	-05 24 16.7	MPC 2009	10.3	3	024
37	1964 02	04.87569	07 03.4	+27 28	MPC 2408			990
39	1950 09	01.9517	22 40 47.2	-08 48 11	MPC 498			034
39	1961 01	21.77414	04 48 39.77	+08 58 46.1	MPC 2363			084
39	1966 01	12.25662	07 58 42.26	+10 13 00.7	MPC 3190		4	804
39	1967 04	29.94034	13 00 21.07	+04 44 16.2	MPC 3103			016
39	1967 04	30.97569	12 59 42.93	+04 48 30.5	MPC 2983		5	040
39	1969 10	08.06331	04 03 29.98	+06 32 36.1	MPC 3485			085
40	1946 10	06.08508	02 04 59.39	+04 53 31.7	MPC 3203		3	020
40	1953 12	01.80250	03 22 04.19	+14 04 54.1	MPC 1056	9.2		021
40	1961 01	21.79769	04 54 21.01	+22 30 12.8	MPC 2363			084

40	1967	11	18.11791	07	46	19.28	+21	02	28.8	MPC	3312		089
41	1950	11	07.64566	02	31	02	-00	04	.4	MPC	651		377
43	1969	09	22.11887	02	02	18.52	+18	04	51.3	MPC	3420		020
43	1969	09	22.12129	02	02	18.36	+18	04	51.7	MPC	3420		020
44	1951	05	04.93640	12	56	12.69	+00	18	00.6	MPC	722		022
45	1973	03	07.89931	11	04	36.92	+09	19	52.0	MPC	3872		990
47	1960	11	22.79176	01	57	12.39	+16	55	58.8	MPC	2150		006
48	1949	04	29.19583	16	31	55.81	-14	26	33.3	MPC	565		786
48	1949	04	29.23299	16	31	54.58	-14	26	25.6	MPC	565		786
50	1956	08	01.86741	21	08	39.65	-12	44	25.1	MPC	1584		057
51	1938	03	06.08824	11	06	13.05	+02	16	58.3	MPC	578	6	804
51	1949	03	30.01371	11	51	01.32	+03	06	40.9	MPC	337		804
51	1949	03	30.01815	11	51	01.14	+03	06	43.7	MPC	337		804
51	1949	04	02.21006	11	48	42.49	+03	40	34.1	MPC	550		754
51	1953	05	24.91619	15	43	49.40	-03	38	15.5	MPC	2832	3	083
51	1953	06	29.87806	15	23	38.09	-03	31	37.4	MPC	990		008
51	1956	01	13.66111	09	13	25.99	+03	01	31.8	MPC	2584		388
51	1957	06	07.36792	19	37	32.22	-06	06	03.2	MPC	1804		804
51	1960	06	04.81461	12	37	02.10	+04	40	53.6	MPC	2537		073
51	1961	08	21.83781	22	13	40.13	-03	37	34.5	MPC	2539		073
51	1961	08	21.84889	22	13	39.20	-03	37	25.5	MPC	2539		073
51	1961	09	27.77135	21	48	32.31	-08	55	19.9	MPC	2540	7	073
51	1965	10	18.89549	00	48	33.08	-01	02	48.3	MPC	2923	8	999
51	1965	10	18.89895	00	48	32.90	-01	02	49.7	MPC	2923	8	999
51	1965	10	18.90171	00	48	32.81	-01	02	51.3	MPC	2923	8	999
51	1973	12	18.31430	07	17	53.34	+06	01	49.6	MPC	3790	9	804
51	1974	01	23.89583	06	43	18.68	+07	43	43.4	MPC	4041		990
51	1974	02	22.82004	06	32	00.36	+11	06	05.9	MPC	3876		006
51	1974	03	05.84841	06	35	10.62	+12	18	57.9	MPC	3876		006
51	1976	12	29.81389	01	19	02.39	-00	43	35.9	MPC	4557		022
51	1976	12	29.82153	01	19	02.64	-00	43	33.9	MPC	4557		022
52	1968	05	04.01393	16	00	55.11	-10	13	02.0	MPC	3301		057
52	1976	11	27.87294	04	10	24.07	+10	28	56.8	MPC	4239		057
53	1951	02	07.61597	09	51	22.04	+12	44	04.2	MPC	2472		388
56	1970	09	02.85807	22	17	10.94	-00	54	42.0	MPC	3798		006
57	1952	05	14.19303	13	26	.4	-04	43		MPC	824	13.3	760
59	1972	11	27.79678	02	28	30.52	+02	26	02.8	MPC	5155		073
60	1962	04	07.9	11	37	.7	+01	33		MPC	2209	12.2	A 008
61	1973	08	01.03227	18	50	59.31	-42	25	31.3	MPC	3803	B	839
65	1965	10	18.61661	01	22	36.01	+04	51	36.7	MPC	4950	7	330
66	1973	03	28.90440	12	43	38.00	-04	56	51.2	MPC	3968		095
68	1960	12	05.79735	03	11	37.67	+21	19	31.7	MPC	2538		073
68	1960	12	05.81050	03	11	37.04	+21	19	31.3	MPC	2538		073
69	1971	08	04.87018	20	25	41.06	-08	45	32.8	MPC	5106		073
69	1971	08	04.87814	20	25	40.72	-08	45	34.5	MPC	5106		073
71	1966	07	11.36139	21	51	02.09	-16	15	16.3	MPC	2737	C	669
71	1966	07	18.35826	21	45	04.41	-15	49	22.1	MPC	2737	C	669
71	1966	07	23.33569	21	40	11.18	-15	32	00.3	MPC	2737	C	669
72	1951	11	23.8771	03	28	18.63	+14	15	36.2	MPC	764		990
72	1953	03	06.9125	11	19	12.83	-01	47	08.5	MPC	917		990
72	1961	10	01.62197	01	15	16.87	+10	23	00.1	MPC	2212		330
72	1971	09	23.86111	21	47	59.99	-05	51	53.7	MPC	3382		056
75	1958	10	05.90169	23	22	32.08	-03	40	19.1	MPC	2009	10.1	3 024
75	1966	04	26.98425	14	24	59.99	-19	34	44.2	MPC	3328	D	020
75	1966	04	27.02990	14	24	57.09	-19	34	34.6	MPC	3328	D	020
75	1971	08	04.93978	21	58	31.21	-19	53	43.5	MPC	5107		073
75	1971	08	04.94462	21	58	30.99	-19	53	43.4	MPC	5107		073
77	1940	08	24.11325	20	39	47.94	-21	12	49.9	MPC	616		804
77	1971	10	09.84531	00	15	44.56	+02	18	19.9	MPC	5107		073

77	1971	10	09.85778	00	15	43.91	+02	18	15.7	MPC	5107		073
79	1947	09	19.61669	23	32	47	+02	07.0		MPC	76		377
79	1951	10	26.9028	02	07	19.85	+11	48	25.0	MPC	763		990
79	1954	06	22.9731	18	03	36.57	-16	51	16.3	MPC	3044	E	022
79	1966	06	30.46042	22	44	25.44	-01	39	45.0	MPC	2737	C	669
79	1966	07	13.37803	22	48	03.31	-00	55	22.9	MPC	2737	C	669
79	1974	11	12.96181	03	22	59.70	+14	35	49.3	MPC	4045		990
80	1944	06	13.08929	15	29	10.99	-12	23	29.3	MPC	1559		839
80	1944	06	13.10037	15	29	10.46	-12	23	25.3	MPC	1559		839
80	1944	06	13.11145	15	29	09.97	-12	23	22.1	MPC	1559		839
80	1944	06	13.12253	15	29	09.41	-12	23	18.6	MPC	1559		839
80	1969	10	04.86821	00	36	03.79	+13	01	42.3	MPC	3067	10.5	021
81	1953	03	05.8958	11	13	48.65	+08	35	24.7	MPC	917		990
81	1953	03	09.9146	11	10	12.58	+08	48	33.9	MPC	917		990
83	1971	04	16.82184	11	25	25.73	+07	12	21.2	MPC	5107		073
87	1949	03	08.20069	10	10	00.15	+26	22	28.9	MPC	566		786
87	1949	03	08.22847	10	09	58.93	+26	22	29.3	MPC	566		786
87	1951	06	24.83812	17	46	36	-27	15.7		MPC	647	11.0	078
87	1952	09	09.85694	23	38	53.26	-19	37	37.6	MPC	864	11.8	078
87	1957	05	24.92153	15	16	58.64	-12	44	58.4	MPC	1699		990
88	1948	03	18.17873	12	32	34.06	-11	59	38.2	MPC	259		839
88	1948	03	18.20980	12	32	32.59	-11	59	29.5	MPC	259		839
88	1968	11	19.80889	01	36	25.09	+17	15	22.1	MPC	3423	3	020
88	1968	11	19.81997	01	36	24.73	+17	15	19.6	MPC	3423	3	020
89	1964	09	01.88505	22	31	38.06	+07	19	18.8	MPC	2734		040
90	1955	08	15.61389	21	43	49.38	-17	19	59.6	MPC	2609		388
90	1956	12	06.85903	03	37	05.97	+18	53	42.2	MPC	1564		990
90	1956	12	06.87986	03	37	05.40	+18	53	39.5	MPC	1564		990
93	1940	09	13.05017	22	33	42.85	-15	19	00.4	MPC	617		804
93	1975	03	19.96135	09	27	27.68	+22	01	23.6	MPC	4863	F	020
93	1975	03	19.97174	09	27	27.38	+22	01	22.9	MPC	4863	F	020
97	1940	09	10.04336	22	20	59.94	-09	44	19.8	MPC	617	D	804
97	1971	12	11.83703	04	04	28.82	-01	55	41.8	MPC	5108		073
97	1971	12	11.84395	04	04	28.55	-01	55	40.7	MPC	5108		073
101	1953	01	09.95088	07	30	02.73	+34	42	21.5	MPC	986		983
103	1948	09	28.80025	00	33	18.56	-03	48	53.7	MPC	186		066
103	1948	10	09.92203	00	24	34.22	-04	56	44.5	MPC	2341		047
103	1952	07	27.01421	20	49	50.39	-16	20	29.3	MPC	916	3	006
104	1938	03	08.05191	12	43	26.99	-01	55	56.3	MPC	3205		020
105	1966	07	05.24063	15	29	35.08	+13	32	46.4	MPC	2737	C	669
105	1966	07	15.19802	15	33	43.38	+12	04	54.5	MPC	2737	C	669
105	1966	07	21.19959	15	37	32.03	+11	03	05.2	MPC	2737	C	669
106	1947	09	09.942	23	04	56	-13	34.6		MPC	42		006
106	1953	09	30.89306	01	47	01.62	+05	43	47.4	MPC	993		990
106	1953	10	05.92778	01	43	34.78	+05	28	14.3	MPC	1018		990
107	1946	10	06.08508	02	09	28.13	+05	21	56.1	MPC	3205	3	020
108	1969	10	03.91400	22	42	28.41	-08	36	52.0	MPC	3424		020
108	1969	10	03.93132	22	42	27.86	-08	36	51.3	MPC	3424		020
109	1971	11	15.81563	02	52	04.60	+29	12	15.5	MPC	3961	3	075
109	1971	12	11.69261	02	34	53.49	+28	44	13.9	MPC	5108		073
109	1971	12	11.70369	02	34	53.34	+28	44	13.3	MPC	5108		073
110	1952	05	17.87222	16	26	05.21	-22	51	54.2	MPC	864	11.3	D 078
111	1949	07	16.87656	19	04	10	-25	02.5		MPC	283	11.5	078
113	1952	05	17.87222	16	45	44.66	-14	31	34.0	MPC	864	11.0	D 078
115	1961	01	25.74784	09	20	56.39	+14	03	43.3	MPC	2316	G	334
115	1972	03	05.79653	08	34	03.74	+14	16	48.2	MPC	3961	E	075
117	1961	01	13.52032	05	47	34.20	+44	04	36.3	MPC	2213		330
117	1973	06	01.06881	14	26	28.87	-35	11	07.7	MPC	3803	B	839
121	1975	06	11.16632	17	54	12.92	-25	32	49.4	MPC	4296	3	839

121	1975 06 11.17994	17 54 12.23	-25 32 50.4	MPC 4296	3 839
122	1951 04 02.9382	12 30 12.64	-02 47 15.6	MPC 763	990
122	1965 09 21.95294	00 49 21.61	+04 51 43.8	MPC 2603	095
124	1969 04 09.81389	12 32 52.36	-03 04 46.1	MPC 3961	075
126	1947 05 12.792	14 08.8	-14 35	MPC 5	12.0 H 078
126	1971 11 09.76313	01 32 46.91	+10 46 37.4	MPC 5108	I 073
126	1971 11 09.77491	01 32 46.37	+10 46 35.2	MPC 5108	I 073
127	1956 01 10.60139	07 13 32.52	+35 19 13.5	MPC 2585	388
129	1952 08 25.9070	20 09 35.17	-18 38 07.3	MPC 2339	B 022
129	1961 04 10.8558	12 40 39.0	+13 30 24	MPC 2362	D 128
129	1966 07 06.19305	13 51 06.41	+04 34 59.7	MPC 2737	C 669
129	1966 07 11.19896	13 55 11.67	+03 41 35.0	MPC 2737	C 669
129	1966 07 18.20046	14 01 42.34	+02 24 00.0	MPC 2737	C 669
133	1969 07 16.90764	20 03 31.37	-25 05 03.5	MPC 3039	076
135	1949 01 31.87676	07 10 24.03	+25 03 44.2	MPC 326	J 983
135	1951 10 26.8778	00 33 22.93	+06 21 34.3	MPC 763	3 990
136	1965 10 17.61109	00 08 45.79	-00 49 22.9	MPC 4951	330
139	1961 07 18.52750	19 53.5	-36 21	MPC 2152	414
139	1969 02 12.85903	08 57 27.90	+31 28 14.6	MPC 3186	990
140	1950 05 17.88731	17 21 27	-19 52.2	MPC 457	10.0 078
142	1966 06 08.95400	16 05 00.65	-23 39 41.5	MPC 3330	3 020
142	1966 06 08.97478	16 04 59.57	-23 39 33.7	MPC 3330	3 020
143	1949 03 31.88235	14 00 02	-27 44.9	MPC 239	12.0 078
144	1958 12 03.44005	01 55 59.15	+07 42 48.0	MPC 1904	E 330
202	1955 10 20.88088	02 41 41.87	+02 28 45.6	MPC17072	055
604	1957 03 28.92694	11 55 42.14	+01 47 05.3	MPC 1673	012

Note 1: 1955 BG = (3960). 2: date originally given as 1990 09 22.33681. 3: date changed by +1 day. 4: date changed by -10 days. 5: date originally given as 1967 04 07.97569. 6: time changed by -2 hours. 7: date changed by +2 days. 8: time changed by +3 hours. 9: date originally given as 1973 12 18.34130. A: date changed by -20 days. B: date changed by +1 month. C: time changed by -12 hours. D: date changed by -1 day. E: date changed by -2 days. F: date changed by +9 days. G: time changed by +12 hours. H: date changed by +4 days. I: time changed by -4 hours. J: originally given as (139).

* * * * *

DELETED OBSERVATIONS.

The following observations are to be deleted.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Obs.
39	1955 10 18.84248	02 19 59.01	-00 44 01.6	MPC 1345	021	
39	1963 07 01.86963	16 06 22.66	-05 51 24.0	MPC 2757	073	
39	1963 07 01.87656	16 06 22.69	-05 51 23.2	MPC 2757	073	
39	1966 03 28.84441	07 32 45.42	+16 29 28.1	MPC 3096	999	
39	1966 03 28.84856	07 32 45.40	+16 29 28.2	MPC 3096	999	
39	1966 03 28.85134	07 32 45.42	+16 29 28.1	MPC 3096	999	
39	1970 01 09.08811	03 14 37.30	+03 51 05.1	MPC 3787	804	
39	1970 01 09.09503	03 14 37.31	+03 51 03.8	MPC 3787	804	
39	1970 01 09.10197	03 14 37.34	+03 51 03.9	MPC 3787	804	
40	1962 06 18.79394	14 00 41.38	-07 52 15.1	MPC 2616	073	
40	1962 06 18.81209	14 00 41.43	-07 52 15.7	MPC 2616	073	
40	1967 12 02.97176	07 45 50.22	+21 38 04.9	MPC 3327	020	
40	1967 12 02.97384	07 45 50.22	+21 38 05.1	MPC 3327	020	
40	1967 12 02.97591	07 45 50.15	+21 38 04.8	MPC 3327	020	
40	1972 06 16.84794	12 16 34.69	+03 13 26.5	MPC 5727	020	
40	1972 06 16.84968	12 16 34.68	+03 13 26.7	MPC 5727	020	

40	1972	06	16.85141	12	16	34.66	+03	13	26.8	MPC	5727	020
44	1974	05	17.91389	16	23	40.64	-15	54	44.0	MPC	4042	990
44	1974	05	17.91944	16	23	40.75	-15	54	44.1	MPC	4042	990
45	1941	03	15.811	06	39.6		+19	24		MPC	61	031
45	1941	03	17.000	06	40.6		+19	28		MPC	61	031
49	1966	11	14.96746	01	41	38.35	+15	47	22.7	MPC	2954	013
49	1966	11	14.97438	01	41	38.35	+15	47	21.1	MPC	2954	013
49	1973	01	26.05695	07	01	07.59	+22	14	03.3	MPC	4860	020
49	1973	01	26.05868	07	01	07.60	+22	14	03.0	MPC	4860	020
51	1936	10	15.90764	01	54	28.83	+02	57	32.4	MPC	3203	020
51	1936	10	15.94227	01	54	26.88	+02	57	14.9	MPC	3203	020
51	1950	08	10.55646	21	34	52.00	-04	25	33.1	MPC	2334	330
51	1950	09	13.52631	21	09	14.73	-08	48	58.5	MPC	2334	330
51	1961	09	05.89655	22	01	06.54	-05	36	34.8	MPC	2539	073
51	1961	10	28.84778	22	07	40.74	-04	40	27.4	MPC	2541	073
51	1961	10	28.85540	22	07	40.35	-04	40	31.9	MPC	2541	073
51	1964	05	09.04377	16	58	26.26	-06	53	45.0	MPC	2653	012
51	1972	08	09.04605	23	09	18.83	+00	20	02.9	MPC	3791	012
51	1972	08	09.05125	23	09	19.26	+00	20	36.3	MPC	3791	012
51	1979	08	13.76530	20	26	29.81	-07	21	45.4	MPC	5426	186
51	1979	08	13.76807	20	26	29.80	-07	21	45.5	MPC	5426	186
51	1979	08	13.77084	20	26	29.79	-07	21	45.9	MPC	5426	186
51	1979	08	14.76945	20	25	40.02	-07	30	12.8	MPC	5426	186
51	1979	08	14.77222	20	25	40.00	-07	30	12.9	MPC	5426	186
51	1979	08	14.77499	20	25	39.98	-07	30	13.1	MPC	5426	186
54	1951	04	09.93355	13	18	59.48	-27	31	12.1	MPC	598	077
54	1961	09	22.02548	00	49	29.69	+22	53	17.4	MPC	2190	006
56	1974	08	21.76143	19	09	18.27	-09	02	44.3	MPC	5155	073
56	1974	08	21.77251	19	09	18.29	-09	02	44.8	MPC	5155	073
57	1954	09	03.88677	22	44	23.61	+06	31	05.2	MPC	1205	057
59	1952	03	20.938	12	06.3		+02	15		MPC	767	077
59	1963	10	10.88889	02	32.0		+05	21		MPC	2318	990
59	1963	10	17.88681	02	27.8		+04	34		MPC	2318	990
60	1955	05	18.93542	15	07.1		-13	31		MPC	1273	990
60	1955	05	21.89236	15	04.6		-13	15		MPC	1273	990
60	1962	03	02.54	12	11.7		-03	10		MPC	2550	388
63	1962	08	17.83893	21	03	04.91	-20	37	23.8	MPC	2864	073
63	1962	08	17.85070	21	03	04.22	-20	37	25.3	MPC	2864	073
63	1962	10	02.73431	20	48	22.97	-18	57	14.4	MPC	2542	073
63	1973	08	28.91181	19	15	05.65	-26	59	53.7	MPC	3874	990
63	1973	08	28.92570	19	15	05.52	-26	59	54.0	MPC	3874	990
65	1958	09	05.90139	22	16	26.01	-09	55	04.9	MPC	1893	990
65	1958	09	12.84653	22	21	29.71	-10	27	05.5	MPC	1893	990
65	1959	11	27.59398	02	25	16.30	+09	52	00.9	MPC	2212	330
66	1941	12	01.17740	06	58	43.36	+27	46	32.9	RI	2354	028
67	1956	11	06.63229	02	13	08.21	+10	26	59.6	MPC	2644	388
67	1969	01	19.93783	07	08	20.02	+13	24	40.8	MPC	3422	020
67	1969	01	19.94198	07	08	19.96	+13	24	40.3	MPC	3422	020
67	1974	05	23.87371	15	11	05.79	-11	48	14.7	MPC	5156	073
67	1974	05	23.87890	15	11	05.77	-11	48	13.3	MPC	5156	073
68	1940	05	03.97	14	48.9		-17	57		RI	2160	119
73	1968	08	25.94088	22	54	25.37	-08	57	29.7	MPC	3423	020
73	1968	08	25.95196	22	54	24.77	-08	57	32.2	MPC	3423	020
73	1977	11	12.08368	00	24	38.20	+03	44	19.0	MPC	5028	788
73	1977	11	12.10521	00	24	38.11	+03	44	18.8	MPC	5028	788
74	1967	05	09.89541	12	45	40.85	-04	27	01.2	MPC	3328	020
74	1967	05	09.92546	12	45	40.38	-04	26	53.3	MPC	3328	020
76	1955	07	22.05269	20	48	38.92	-14	32	56.4	MPC	1755	020
76	1968	09	29.75280	22	35	48.30	-06	58	38.0	MPC	3423	020

76	1968 09 29.75592	22 35 48.20	-06 58 35.4	MPC 3423	020
76	1968 10 01.83662	22 34 58.80	-07 03 12.5	MPC 3423	020
76	1968 10 01.85047	22 34 58.06	-07 03 15.5	MPC 3423	020
77	1940 07 10.99371	21 17 02.42	-19 00 16.8	MPC 3204	020
77	1940 07 11.03241	21 17 01.28	-19 00 21.1	MPC 3204	020
77	1975 09 04.84687	21 29 35.82	-17 03 08.4	MPC 4862	020
77	1975 09 04.85172	21 29 35.82	-17 03 09.0	MPC 4862	020
79	1949 03 18.87	11 02.8	+01 37	MPC 323	020
80	1962 09 17.92120	23 50 45.16	+12 32 50.8	MPC 2865	073
80	1962 09 17.93575	23 50 45.10	+12 32 42.4	MPC 2865	073
80	1962 10 05.73875	23 41 17.18	+08 55 26.0	MPC 2865	073
80	1962 10 05.75398	23 41 17.74	+08 54 09.1	MPC 2865	073
81	1956 11 26.89236	04 16.1	+34 27	MPC 1562	990
81	1956 11 27.90069	04 14.9	+34 31	MPC 1562	990
82	1936 07 18.00300	21 00 44.72	-21 07 15.6	MPC 3204	020
82	1936 07 18.03730	21 00 41.84	-21 07 25.0	MPC 3204	020
82	1973 09 17.74054	21 26 17.25	-18 27 52.9	MPC 5157	073
82	1973 09 17.75439	21 26 17.19	-18 27 55.7	MPC 5157	073
83	1937 03 12.96924	13 15 16.47	-04 45 53.8	MPC 3204	020
83	1937 03 13.01875	13 15 14.75	-04 45 50.5	MPC 3204	020
84	1972 02 15.77869	06 31 40.25	+30 39 37.4	MPC 5728	020
84	1972 02 15.79600	06 31 39.62	+30 39 37.8	MPC 5728	020
86	1969 08 27.07489	00 46 11.71	-03 11 12.9	MPC 3423	020
86	1969 08 27.07731	00 46 11.46	-03 11 10.9	MPC 3423	020
86	1969 09 05.99910	00 43 14.84	-03 49 34.8	MPC 3423	020
86	1969 09 06.00326	00 43 14.72	-03 49 34.6	MPC 3423	020
88	1953 05 19.94792	14 45 10.96	-22 27 39.0	MPC 947	990
88	1963 09 21.79326	22 23 10.96	-01 18 27.3	MPC 2542	073
88	1963 09 21.83186	22 23 09.51	-01 18 37.4	MPC 2542	073
89	1960 10 18.50346	22 54 31.19	+18 35 33.4	MPC 2316	334
89	1960 11 21.68219	23 10 06.03	+16 42 40.1	MPC 2538	073
89	1960 11 21.69327	23 10 05.51	+16 42 39.5	MPC 2538	073
89	1964 08 31.87108	22 32 27.12	+07 14 59.6	MPC 2472	006
90	1954 05 04.95417	13 56 11.68	-09 05 29.2	MPC 1144	990
90	1954 05 05.91667	13 55 25.80	-09 23 49.6	MPC 1145	990
90	1961 10 27.92934	00 38 32.71	+01 12 20.3	MPC 2361	013
90	1961 10 27.93350	00 38 32.70	+01 12 20.3	MPC 2361	013
90	1961 10 27.94181	00 38 32.72	+01 12 20.3	MPC 2361	013
90	1961 10 27.94596	00 38 32.69	+01 12 20.3	MPC 2361	013
90	1962 12 19.67550	05 48 59.64	+23 59 43.7	MPC 2317	334
90	1966 08 22.91	20 20.2	-22 35	MPC 2699	020
91	1955 01 17.47778	06 30 37.76	+26 30 46.0	MPC 2295	388
91	1957 07 27.92708	21 17.3	-18 42	MPC 1697	990
91	1957 07 29.92847	21 15.3	-18 46	MPC 1697	990
93	1977 10 18.60139	01 11 56.65	+12 20 49.0	MPC 4535	878
93	1977 10 18.60625	01 11 56.83	+12 20 49.2	MPC 4535	878
94	1956 08 05.55278	20 11 11.77	-30 11 38.0	MPC 2644	388
97	1948 07 08.9	18 14.1	-08 19	MPC 198	020
99	1969 10 03.97633	23 57 30.47	-15 49 57.0	MPC 3424	020
99	1969 10 03.99365	23 57 29.47	-15 50 03.8	MPC 3424	020
100	1953 03 05.9	08 55.8	+19 17	MPC 922	020
100	1956 11 07.0	03 21.2	+08 54	MPC 1675	020
100	1956 11 30.84861	03 03.3	+08 18	MPC 1563	990
100	1956 12 02.51944	02 58 16.19	+08 07 53.2	MPC 2644	388
101	1972 11 17.68976	00 39 16.45	+17 02 47.9	MPC 5157	073
101	1972 11 17.70014	00 39 16.25	+17 02 47.2	MPC 5157	073
102	1959 09 18.81451	21 44 37.00	-05 44 02.5	MPC 2537	073
103	1969 04 14.92500	14 49 26.58	-07 32 56.4	MPC 3187	990
103	1969 04 14.94583	14 49 25.10	-07 32 50.0	MPC 3187	990

103	1975	10	28.80166	03	13	26.73	+09	04	30.5	MPC	4239	057
104	1955	04	14.9250	13	43.5		-09	41		MPC	1273	990
104	1955	04	15.8889	13	42.9		-09	39		MPC	1273	990
109	1971	11	09.07593	02	57	57.55	+29	04	28.8	MPC	5108	073
109	1971	11	09.08075	02	57	57.25	+29	04	29.1	MPC	5108	073
110	1938	03	29.98060	13	47	20.91	-05	16	18.8	MPC	3205	020
110	1938	03	30.02094	13	47	19.60	-05	16	18.2	MPC	3205	020
110	1955	01	26.91111	07	21.4		+29	37		MPC	1229	990
112	1957	07	27.92708	21	11.2		-17	40		MPC	1697	990
112	1957	07	29.92847	21	09.4		-17	44		MPC	1697	990
114	1957	02	20.52188	09	21	33.80	+12	22	38.1	MPC	3060	388
114	1972	10	02.78499	22	34	17.90	-09	38	56.6	MPC	5158	073
114	1972	10	02.79538	22	34	17.93	-09	38	56.7	MPC	5158	073
115	1956	11	26.98958	05	12.0		+42	03		MPC	1562	990
115	1956	11	27.96736	05	10.8		+41	57		MPC	1562	990
115	1956	11	29.96528	05	08.9		+41	50		MPC	1563	990
116	1936	11	10.80539	02	25	05.84	+12	12	15.2	MPC	3205	020
116	1936	11	10.83794	02	25	03.95	+12	12	10.2	MPC	3205	020
122	1939	03	12.97435	09	36	08.36	+13	08	24.8	MPC	3206	020
122	1939	03	13.02422	09	36	06.93	+13	08	37.9	MPC	3206	020
122	1956	02	05.53750	08	11	49.95	+18	02	52.3	MPC	2585	388
124	1944	06	24.98153	17	55	58.78	-18	27	34.9	RI	2560	028
124	1957	07	25.91553	19	46	10.02	-16	28	32.0	MPC	1822	020
125	1971	05	26.92692	15	56	33.99	-12	58	58.9	MPC	5108	073
125	1971	05	26.94042	15	56	34.04	-12	58	58.5	MPC	5108	073
125	1972	10	23.73523	23	48	43.94	-03	39	26.9	MPC	5158	073
125	1972	10	23.74424	23	48	44.37	-03	39	34.2	MPC	5158	073
127	1959	11	12.79220	02	27	48.94	+17	37	04.5	MPC	2537	073
128	1963	10	15.84306	02	38.6		+07	51		MPC	2318	990
129	1969	02	24.81900	03	33	19.11	+07	42	58.4	MPC	3425	020
129	1969	02	24.82315	03	33	19.13	+07	42	58.7	MPC	3425	020
130	1953	09	30.88537	22	27	00	-21	55.2		MPC	1066	983
130	1975	10	07.10799	22	27	49.16	-23	36	29.6	MPC	4154	786
130	1975	10	07.12188	22	27	49.15	-23	36	28.9	MPC	4154	786
135	1965	04	03.8635	11	46.5		-00	32		MPC	2597	006
137	1970	12	21.85893	05	18	19.90	+06	56	35.3	MPC	5109	073
137	1970	12	21.87452	05	18	17.27	+06	57	17.4	MPC	5109	073
137	1972	02	24.72050	08	34	27.37	+02	10	09.8	MPC	5159	073
137	1972	02	24.73159	08	34	24.86	+02	10	06.5	MPC	5159	073
144	1958	11	07.80139	02	12.6		+07	32		MPC	1893	990
145	1973	02	28.83731	03	56	16.97	+19	33	11.8	MPC	4866	020
145	1973	02	28.83905	03	56	16.91	+19	33	12.1	MPC	4866	020
149	1967	05	09.89541	12	49	03.24	-04	01	54.5	MPC	3330	020
149	1967	05	09.92546	12	49	02.42	-04	01	53.8	MPC	3330	020

* * * * *

IDENTIFICATION CHANGES.

Continuation to MPC 17076-17078.

Object	Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.	
A910 AB	* 1910	01	08.82875	06 30 57.32	+17 03 07.1	74	024	
A912 TE	* 1912	10	14.89486	01 58 25.74	+37 28 45.7	61	024	
A917 BD	* 1917	01	28.91950	08 51 49.75	+15 11 26.5	55	024	
1948 FE	* 1948	03	31.78702	11 15 08.7	+03 13 32	74	11.9	085
1948 WT	* 1948	11	30.990	03 49.06	+29 24.7	123		022
1948 WT	1948	12	01.875	03 48.11	+29 21.3	123		022
1948 XR	* 1948	12	06.79264	03 44 09.5	+30 23 25	123	10.9	085

default value of G has been reduced from 0.25 to 0.15, a value that will henceforth be used in association with all new orbital data given in the MPCs; this value is also now the only default, and it is denoted in this listing by X. When photoelectric observations are available, least-squares solutions have frequently been made for both H and G (although in some instances G has simply been selected as a compromise), and these are shown with H (in the Johnson V system) given to 0.01 mag and G in units of 0.01 (with a range from -0.12 to +0.60). It should be noted that there are in fact fewer such determinations than before (113, as opposed to 237) and that the previous compilation included cases where observations at different heliocentric longitudes were combined indiscriminately. It is now clear that differences in viewing geometry at different longitudes can cause real and large differences in G, and in such cases the default value is adopted; it has sometimes also been appropriate to round H to 0.1. The vast majority of the determinations of H (G again having its default value) still depend entirely on photographic data; in a few instances the data are so meager and/or discordant that H is given only to the nearest integer. Several dozen of the less certain photographic determinations were made by B. G. Marsden and G. V. Williams. The H values for (4509) onward are simply 0.1 less than those published in the MPCs when these minor planets were numbered, this difference corresponding in a statistical sense to the change in the basic default value of G from 0.25 to 0.15.

1	3.34	12	2	4.13	11	3	5.33	32	4	3.20	32	5	6.85	X
6	5.71	24	7	5.51	X	8	6.49	28	9	6.28	17	10	5.43	X
11	6.55	X	12	7.24	22	13	6.74	X	14	6.30	X	15	5.28	23
16	5.90	20	17	7.76	X	18	6.51	25	19	7.13	10	20	6.50	25
21	7.35	11	22	6.45	21	23	6.95	X	24	7.08	19	25	7.83	X
26	7.5	X	27	7.0	X	28	7.09	X	29	5.85	20	30	7.57	X
31	6.74	X	32	7.56	X	33	8.55	33	34	8.51	X	35	8.5	X
36	8.46	X	37	7.29	24	38	8.32	X	39	6.1	X	40	7.0	X
41	7.12	10	42	7.53	X	43	7.93	11	44	7.03	46	45	7.46	07
46	8.36	06	47	7.84	16	48	6.90	X	49	7.8	X	50	9.24	X
51	7.35	08	52	6.31	18	53	8.81	X	54	7.66	X	55	7.8	X
56	8.31	X	57	7.03	X	58	8.86	X	59	7.93	X	60	8.21	27
61	7.68	X	62	8.76	X	63	7.55	25	64	7.67	48	65	6.62	01
66	9.36	X	67	8.28	X	68	6.78	05	69	7.05	19	70	8.11	14
71	7.30	40	72	8.94	X	73	9.0	X	74	8.66	X	75	8.96	23
76	7.90	X	77	8.52	16	78	8.09	08	79	7.96	25	80	7.98	X
81	8.48	X	82	8.40	28	83	8.66	X	84	9.32	X	85	7.61	X
86	8.54	X	87	6.94	X	88	7.04	14	89	6.60	15	90	8.27	X
91	8.84	X	92	6.61	X	93	7.7	X	94	7.57	X	95	7.84	X
96	7.67	X	97	7.63	X	98	8.84	X	99	9.43	X	100	7.67	X
101	8.33	35	102	9.26	X	103	7.66	X	104	8.27	X	105	8.57	10
106	7.41	X	107	7.08	08	108	8.09	X	109	8.75	04	110	7.80	20
111	8.02	X	112	9.84	X	113	8.74	35	114	8.26	X	115	7.51	12
116	7.82	X	117	7.95	X	118	9.14	X	119	8.42	X	120	7.75	X
121	7.31	X	122	7.87	X	123	8.89	X	124	8.11	19	125	9.04	33
126	9.27	X	127	8.3	X	128	7.49	X	129	7.07	33	130	7.12	X
131	10.03	X	132	9.38	X	133	7.98	13	134	8.76	28	135	8.23	X
136	9.69	X	137	8.05	X	138	8.75	X	139	7.78	X	140	8.34	X
141	8.2	X	142	10.27	X	143	9.12	X	144	7.91	17	145	8.13	X
146	8.20	11	147	8.27	X	148	7.63	X	149	10.79	X	150	8.23	X
151	9.24	X	152	8.33	X	153	7.48	X	154	7.58	X	155	11.39	X
156	8.64	X	157	10.6	X	158	9.27	X	159	8.12	X	160	9.08	X
161	9.15	13	162	8.83	X	163	9.47	-04	164	8.80	X	165	7.65	X
166	9.89	X	167	9.24	X	168	7.94	X	169	9.56	X	170	9.39	X
171	8.31	X	172	8.79	X	173	7.66	01	174	8.48	X	175	8.31	X
176	7.9	X	177	9.49	X	178	9.38	X	179	8.15	X	180	10.31	X

181	7.84	X	182	9.12	X	183	9.68	X	184	8.31	X	185	7.62	X
186	8.91	X	187	8.16	X	188	9.22	X	189	9.33	X	190	7.59	X
191	9.07	X	192	7.13	03	193	9.68	X	194	7.68	X	195	9.01	X
196	6.54	X	197	9.18	X	198	8.33	X	199	8.3	X	200	8.26	X
201	8.43	24	202	7.42	X	203	8.76	X	204	8.89	X	205	9.23	X
206	8.68	X	207	9.92	X	208	8.96	X	209	8.24	X	210	9.33	X
211	7.89	12	212	8.28	X	213	8.64	X	214	9.50	51	215	9.59	X
216	7.30	29	217	9.8	X	218	8.60	32	219	9.32	X	220	11.0	X
221	7.67	13	222	9.13	X	223	9.68	X	224	8.59	X	225	8.72	X
226	9.75	X	227	8.7	X	228	12.48	X	229	9.13	X	230	7.35	27
231	9.2	X	232	10.25	X	233	8.21	X	234	9.02	X	235	8.82	X
236	8.18	-02	237	9.24	X	238	8.18	X	239	10.3	X	240	9.00	X
241	7.58	X	242	9.7	X	243	9.94	X	244	12.2	X	245	7.82	X
246	8.62	X	247	8.04	X	248	10.21	X	249	11.33	X	250	7.58	X
251	10.0	X	252	9.1	X	253	10.2	X	254	12.13	X	255	10.39	X
256	9.8	X	257	9.47	X	258	8.50	23	259	7.76	X	260	8.97	X
261	9.44	19	262	11.67	X	263	10.40	X	264	8.42	X	265	11.2	X
266	8.80	X	267	10.5	X	268	8.28	X	269	9.5	X	270	8.75	X
271	9.80	X	272	10.7	X	273	10.26	X	274	10.1	X	275	8.85	X
276	8.56	X	277	9.84	X	278	9.4	X	279	8.57	X	280	11.19	X
281	12.02	28	282	10.91	X	283	8.72	X	284	10.05	11	285	10.5	X
286	8.98	X	287	8.30	22	288	9.84	X	289	9.51	X	290	11.5	X
291	11.45	X	292	10.24	X	293	9.94	X	294	9.6	X	295	10.19	X
296	12.62	X	297	9.5	X	298	11.0	X	299	11.4	X	300	9.6	X
301	10.1	X	302	10.89	X	303	8.7	X	304	9.74	07	305	8.77	X
306	8.96	X	307	10.12	X	308	8.17	21	309	10.4	X	310	10.3	X
311	9.89	X	312	8.89	X	313	8.90	X	314	9.5	X	315	13.2	X
316	9.8	X	317	10.03	X	318	9.40	X	319	9.8	X	320	10.7	X
321	10.04	X	322	9.01	X	323	9.73	X	324	6.82	09	325	8.65	X
326	9.36	X	327	10.1	X	328	8.6	X	329	9.66	X	330	12.6	X
331	9.62	X	332	9.5	X	333	9.46	X	334	7.64	X	335	8.96	X
336	9.76	X	337	8.74	19	338	8.50	X	339	9.24	X	340	9.9	X
341	10.55	X	342	10.22	X	343	11.56	X	344	8.08	X	345	8.71	10
346	7.13	X	347	8.96	X	348	9.4	X	349	5.93	37	350	8.37	X
351	8.98	X	352	10.01	X	353	11.0	X	354	6.44	37	355	10.4	X
356	8.22	X	357	8.72	X	358	9.1	X	359	8.86	X	360	8.48	X
361	8.22	X	362	9.00	X	363	9.01	X	364	9.86	X	365	9.18	X
366	8.5	X	367	10.7	X	368	9.93	X	369	8.52	X	370	10.68	X
371	8.72	X	372	7.2	X	373	9.13	X	374	8.67	X	375	7.47	27
376	9.49	X	377	8.89	X	378	9.80	X	379	8.87	X	380	9.42	X
381	8.25	X	382	8.77	X	383	9.91	X	384	9.64	X	385	7.49	X
386	7.43	16	387	7.41	X	388	8.57	07	389	7.88	X	390	10.39	X
391	10.1	X	392	9.7	X	393	8.39	X	394	9.66	X	395	10.38	X
396	9.9	X	397	9.31	X	398	10.3	X	399	9.0	X	400	10.1	X
401	9.1	X	402	9.02	X	403	9.1	X	404	9.01	X	405	8.46	X
406	10.36	X	407	8.88	X	408	9.5	X	409	7.62	29	410	8.30	X
411	8.9	X	412	9.0	X	413	10.18	X	414	9.49	X	415	9.21	X
416	7.89	20	417	9.34	X	418	9.77	X	419	8.42	15	420	8.31	X
421	11.78	X	422	10.83	X	423	7.24	X	424	9.8	X	425	9.9	X
426	8.42	X	427	9.8	X	428	11.5	X	429	9.82	X	430	10.3	X
431	8.72	X	432	8.84	X	433	11.16	46	434	11.21	X	435	10.23	X
436	9.8	X	437	10.41	X	438	9.80	X	439	9.83	X	440	11.5	X
441	8.51	X	442	10.03	X	443	10.28	X	444	7.83	22	445	9.29	X
446	8.90	X	447	8.99	X	448	10.30	X	449	9.47	X	450	10.28	X
451	6.65	19	452	11.2	X	453	10.6	X	454	9.20	X	455	8.86	X
456	9.2	X	457	11.0	X	458	9.63	X	459	10.44	X	460	10.6	X
461	10.48	X	462	9.23	X	463	11.82	X	464	9.52	X	465	9.7	X
466	8.30	X	467	10.5	X	468	9.83	X	469	8.62	X	470	10.07	X
471	6.73	37	472	8.92	X	473	12.3	X	474	10.6	X	475	11.88	X

476	8.55	X	477	10.25	X	478	7.98	X	479	9.6	X	480	8.38	X
481	8.6	X	482	8.84	X	483	8.33	X	484	9.86	X	485	8.3	X
486	10.7	X	487	8.14	X	488	7.81	X	489	8.32	X	490	8.32	X
491	8.5	X	492	9.8	X	493	10.3	X	494	8.96	X	495	10.78	X
496	11.61	X	497	10.02	11	498	8.95	X	499	9.39	X	500	9.3	X
501	8.9	X	502	10.77	X	503	9.14	X	504	9.4	X	505	8.61-03	
506	8.85	X	507	9.1	X	508	8.24	X	509	8.40	X	510	9.73	X
511	6.22	16	512	10.68	X	513	9.75	X	514	9.04	X	515	11.23	X
516	8.27	X	517	9.35	X	518	11.0	X	519	9.14	X	520	10.61	X
521	8.31-06		522	9.12	X	523	9.6	X	524	9.83	X	525	12.53	X
526	10.17	X	527	10.1	X	528	9.14	X	529	10.06	X	530	9.29	X
531	11.8	X	532	5.81	26	533	9.67	X	534	9.77	X	535	9.48	X
536	8.08	X	537	8.8	X	538	9.3	X	539	9.7	X	540	10.76	X
541	10.1	X	542	9.36	X	543	9.4	X	544	9.9	X	545	8.84	X
546	9.70	X	547	9.52	X	548	11.26	X	549	11.01	X	550	9.37	X
551	9.57	X	552	9.4	X	553	12.2	X	554	8.97	X	555	10.6	X
556	9.56	X	557	11.8	X	558	9.09	X	559	9.36	X	560	10.6	X
561	11.21	X	562	9.95	X	563	8.50	X	564	10.43	X	565	10.88	X
566	8.03	X	567	9.16	X	568	9.1	X	569	10.12	X	570	8.81	X
571	11.59	X	572	10.94	X	573	9.6	X	574	12.3	X	575	10.9	X
576	9.4	X	577	9.5	X	578	9.2	X	579	7.85	X	580	9.6	X
581	9.4	X	582	9.11	X	583	9.01	X	584	8.71	24	585	10.40	X
586	9.21	X	587	12.2	X	588	8.67	X	589	9.14	X	590	9.90	X
591	10.64	X	592	9.3	X	593	9.28	06	594	12.01	X	595	8.0	X
596	8.90	X	597	9.4	X	598	9.53	X	599	8.71	X	600	10.18	X
601	9.65	X	602	8.31	X	603	12.1	X	604	9.2	X	605	9.3	X
606	10.38	X	607	9.5	X	608	10.6	X	609	10.0	X	610	12.1	X
611	9.19	X	612	11.2	X	613	9.67	X	614	11.0	X	615	10.36	X
616	10.68	X	617	8.19	X	618	8.26	X	619	9.95	X	620	11.28	X
621	10.49	X	622	10.17	X	623	10.97	X	624	7.49	X	625	10.0	X
626	9.00	X	627	9.95	X	628	9.25	X	629	9.9	X	630	11.0	X
631	8.70	X	632	11.6	X	633	9.73	X	634	9.6	X	635	9.01	X
636	9.5	X	637	11.0	X	638	9.8	X	639	8.20	X	640	8.99	X
641	12.1	X	642	9.98	X	643	9.72	X	644	11.13	X	645	9.94	X
646	12.5	X	647	11.41	X	648	9.68	X	649	12.4	X	650	12.93	X
651	10.01	X	652	11.4	X	653	9.18	X	654	8.52	X	655	9.6	X
656	10.0	X	657	10.93	X	658	10.54	X	659	8.99	X	660	9.14	X
661	9.63	X	662	10.5	X	663	9.21	X	664	9.97	X	665	8.1	X
666	10.9	X	667	8.9	X	668	11.8	X	669	10.24	X	670	9.8	X
671	10.0	X	672	11.1	X	673	10.20	X	674	7.42	X	675	7.91	X
676	9.3	X	677	9.7	X	678	9.02	X	679	9.02	X	680	9.31	X
681	11.0	X	682	12.2	X	683	8.72	X	684	10.84	X	685	11.8	X
686	9.67	X	687	11.71	X	688	10.59	X	689	12.15	X	690	7.76	X
691	9.30	X	692	9.18	X	693	9.38	X	694	9.17	X	695	9.30	X
696	9.0	X	697	9.63	X	698	10.7	X	699	11.72	X	700	11.2	X
701	9.25	X	702	7.25	X	703	12.1	X	704	5.94-02		705	8.39	X
706	10.2	X	707	12.2	X	708	10.61	X	709	9.04	X	710	11.1	X
711	11.9	X	712	8.32	03	713	8.97	X	714	9.07	X	715	9.8	X
716	10.84	X	717	11.10	X	718	9.8	X	719	16	X	720	9.71	X
721	9.26	X	722	12.1	X	723	9.7	X	724	13.2	X	725	11.81	X
726	10.57	X	727	9.62	X	728	12.8	X	729	9.31	X	730	14.0	X
731	9.62	X	732	10.7	X	733	9.05	X	734	9.7	X	735	9.55	X
736	11.64	X	737	8.81	X	738	10.13	X	739	8.50	X	740	8.97	X
741	10.4	X	742	9.55	X	743	10.0	X	744	10.21	X	745	10.3	X
746	10.00	X	747	7.69	X	748	9.01	X	749	11.82	X	750	12.13	X
751	8.66	08	752	10.1	X	753	10.21	X	754	9.19	X	755	9.81	X
756	9.6	X	757	10.20	X	758	8.16	X	759	10.5	X	760	7.96	X
761	10.83	X	762	8.28	X	763	12.5	X	764	9.48	X	765	12.4	X
766	10.15	X	767	10.0	X	768	10.21	X	769	8.9	X	770	10.93	X

771	10.49	X	772	8.33	X	773	9.10	X	774	8.6	X	775	10.40	X
776	7.68	34	777	9.8	X	778	9.66	X	779	8.3	X	780	9.0	X
781	9.4	X	782	11.5	X	783	10.6	X	784	9.0	X	785	9.45	X
786	8.65	X	787	10.0	X	788	8.3	X	789	10.9	X	790	8.00	X
791	9.25	X	792	10.33	X	793	10.26	X	794	11.1	X	795	9.7	X
796	9.12	X	797	10.34	X	798	9.44	X	799	10.3	X	800	11.61	X
801	11.55	X	802	12.6	X	803	9.6	X	804	7.84	18	805	9.82	X
806	10.6	X	807	10.56	X	808	9.7	X	809	11.8	X	810	12.7	X
811	10.78	X	812	11.5	X	813	11.7	X	814	8.74	X	815	10.7	X
816	10.0	X	817	10.8	X	818	9.1	X	819	11.9	X	820	10.3	X
821	11.84	X	822	12.18	X	823	11.2	X	824	10.41	X	825	11.50	X
826	11.3	X	827	13.2	X	828	10.33	X	829	10.7	X	830	9.10	X
831	12.8	X	832	11.18	X	833	11.3	X	834	9.39	X	835	11.3	X
836	13.6	X	837	11.8	X	838	10.09	X	839	10.2	X	840	9.6	X
841	12.92	X	842	10.8	X	843	13.6	X	844	9.4	X	845	9.7	X
846	10.26	X	847	10.29	X	848	10.9	X	849	8.10	X	850	9.6	X
851	11.62	X	852	10.09	X	853	11.67	X	854	12.1	X	855	11.8	X
856	10.69	X	857	11.32	X	858	10.0	X	859	9.6	X	860	10.26	X
861	9.6	X	862	10.6	X	863	9.02	X	864	12.87	X	865	11.9	X
866	9.2	X	867	11.3	X	868	10.22	X	869	12.4	X	870	12.1	X
871	12.1	X	872	9.91	X	873	11.49	X	874	10.0	X	875	11.5	X
876	10.89	X	877	10.71	X	878	16	X	879	11.2	X	880	11.46	X
881	11.6	X	882	10.5	X	883	12.59	X	884	8.81	X	885	10.7	X
886	8.7	X	887	13.76-12		888	9.51	X	889	11.1	X	890	10.78	X
891	9.9	X	892	9.8	X	893	9.47	X	894	9.8	X	895	8.3	X
896	11.8	X	897	10.37	X	898	12.0	X	899	10.14	X	900	11.74	X
901	11.35	X	902	12.3	X	903	9.8	X	904	9.9	X	905	11.59	X
906	9.5	X	907	9.76	X	908	10.69	X	909	8.95	X	910	10.3	X
911	7.89	X	912	8.4	X	913	11.9	X	914	8.76	X	915	11.7	X
916	11.2	X	917	11.0	X	918	10.7	X	919	11.3	X	920	11.19	X
921	10.6	X	922	11.7	X	923	11.5	X	924	9.37	X	925	8.33	X
926	10.3	X	927	9.54	X	928	9.4	X	929	12.1	X	930	11.4	X
931	9.26	X	932	10.00	X	933	11.8	X	934	10.3	X	935	12.9	X
936	10.0	X	937	11.83	X	938	10.8	X	939	12.14	X	940	9.55	X
941	11.55	X	942	10.3	X	943	9.77	X	944	10.77	X	945	10.13	X
946	10.42	X	947	9.8	X	948	11.3	X	949	9.7	X	950	11.6	X
951	11.46	X	952	9.2	X	953	10.3	X	954	9.94	X	955	11.1	X
956	12.6	X	957	9.7	X	958	10.71	X	959	10.2	X	960	12.9	X
961	11.3	X	962	11.52	X	963	12.49	X	964	10.9	X	965	9.8	X
966	9.91	X	967	12.1	X	968	10.01	X	969	12.57	X	970	12.5	X
971	10.05	X	972	9.5	X	973	9.6	X	974	10.30	X	975	10.41	X
976	9.22	X	977	9.67	X	978	9.73	X	979	9.8	X	980	7.85	06
981	10.57	X	982	9.9	X	983	9.58	X	984	9.03	X	985	12.7	X
986	9.4	X	987	9.3	X	988	11.2	X	989	11.8	X	990	11.5	X
991	11.12	X	992	10.8	X	993	11.8	X	994	10.30	X	995	10.3	X
996	10.88	X	997	12.0	X	998	11.9	X	999	11.1	X	1000	9.8	X
1001	9.77	X	1002	11.1	X	1003	10.2	X	1004	9.99	X	1005	9.7	X
1006	11.2	X	1007	11.5	X	1008	10.4	X	1009	14.7	X	1010	10.4	X
1011	12.74	X	1012	12.41	X	1013	10.12	X	1014	12.1	X	1015	9.03	X
1016	12.0	X	1017	10.9	X	1018	10.62	X	1019	12.63	X	1020	11.9	X
1021	8.98	X	1022	10.5	X	1023	9.76	X	1024	10.6	X	1025	12.55	X
1026	13.3	X	1027	10.6	X	1028	9.43	X	1029	10.88	X	1030	10.3	X
1031	9.56	X	1032	10.0	X	1033	11.0	X	1034	12.2	X	1035	10.3	X
1036	9.45	30	1037	13.6	X	1038	10.82	X	1039	11.1	X	1040	10.9	X
1041	9.9	X	1042	9.8	X	1043	9.79	X	1044	10.9	X	1045	12.9	X
1046	10.2	X	1047	11.86	X	1048	9.75	X	1049	12.0	X	1050	12.0	X
1051	9.9	X	1052	11.97	X	1053	12.4	X	1054	10.3	X	1055	12.0	X
1056	11.7	X	1057	10.96	X	1058	11.98	X	1059	10.7	X	1060	12.7	X
1061	12.09	X	1062	9.85	X	1063	11.38	X	1064	10.5	X	1065	13.2	X

1066	12.5	X	1067	10.99	X	1068	10.54	X	1069	9.3	X	1070	10.6	X
1071	10.1	X	1072	10.5	X	1073	11.9	X	1074	10.0	X	1075	10.15	X
1076	12.30	X	1077	12.2	X	1078	11.80	X	1079	11.20	X	1080	12.20	X
1081	11.3	X	1082	10.41	X	1083	12.0	X	1084	10.78	X	1085	9.4	X
1086	9.3	X	1087	9.73	X	1088	11.39	X	1089	11.6	X	1090	12.49	X
1091	10.6	X	1092	10.82	X	1093	8.83	X	1094	11.9	X	1095	10.42	X
1096	10.3	X	1097	11.7	X	1098	10.2	X	1099	10.4	X	1100	11.0	X
1101	10.1	X	1102	9.40	X	1103	12.25	X	1104	12.5	X	1105	10.09	X
1106	12.0	X	1107	9.1	X	1108	11.91	X	1109	10.06	X	1110	11.8	X
1111	10.67	X	1112	10.05	X	1113	9.4	X	1114	9.9	X	1115	9.3	X
1116	9.7	X	1117	11.9	X	1118	9.5	X	1119	11.2	X	1120	12.8	X
1121	11.8	X	1122	12.0	X	1123	11.7	X	1124	10.67	X	1125	11.2	X
1126	12.1	X	1127	10.95	X	1128	10.7	X	1129	10.20	X	1130	12.1	X
1131	13.0	X	1132	10.6	X	1133	12.22	X	1134	14.3	X	1135	10.2	X
1136	11.0	X	1137	10.74	X	1138	11.3	X	1139	12.51	X	1140	10.28	X
1141	13.9	X	1142	10.3	X	1143	7.93	X	1144	10.00	X	1145	11.1	X
1146	9.80	X	1147	12.0	X	1148	10.15	X	1149	10.57	X	1150	13.2	X
1151	12.7	X	1152	11.3	X	1153	12.1	X	1154	10.51	X	1155	11.5	X
1156	11.8	X	1157	10.0	X	1158	10.8	X	1159	11.55	X	1160	11.1	X
1161	11.6	X	1162	9.44	X	1163	10.6	X	1164	12.8	X	1165	10.3	X
1166	11.3	X	1167	9.85	X	1168	12.53	X	1169	13.0	X	1170	12.43	X
1171	9.90	X	1172	8.33	X	1173	8.89	X	1174	12.0	X	1175	10.2	X
1176	10.9	X	1177	9.30	X	1178	11.81	X	1179	12.9	X	1180	9.14	X
1181	11.5	X	1182	11.3	X	1183	12.1	X	1184	11.1	X	1185	12.09	X
1186	9.20	X	1187	11.3	X	1188	11.7	X	1189	10.0	X	1190	12.4	X
1191	11.3	X	1192	12.92	X	1193	12.2	X	1194	10.2	X	1195	13.7	X
1196	10.26	X	1197	10.17	X	1198	14.6	X	1199	10.36	X	1200	10.5	X
1201	11.4	X	1202	10.6	X	1203	11.2	X	1204	12.2	X	1205	13.6	X
1206	11.2	X	1207	11.0	X	1208	8.99	X	1209	10.6	X	1210	9.91	X
1211	10.6	X	1212	9.54	X	1213	10.8	X	1214	10.9	X	1215	11.14	X
1216	13.49	X	1217	12.5	X	1218	12.9	X	1219	11.94	24	1220	11.72	23
1221	17.7	X	1222	11.2	X	1223	10.58	X	1224	11.36	X	1225	12.1	X
1226	11.1	X	1227	10.1	X	1228	11.5	X	1229	11.1	X	1230	12.8	X
1231	11.6	X	1232	10.2	X	1233	11.3	X	1234	10.71	X	1235	12.68	X
1236	11.93	X	1237	10.91	X	1238	11.9	X	1239	12.5	X	1240	9.7	X
1241	9.45	X	1242	10.1	X	1243	9.68	X	1244	11.3	X	1245	9.89	X
1246	10.9	X	1247	10.52	X	1248	9.7	X	1249	11.54	X	1250	12.26	X
1251	10.50	X	1252	10.89	X	1253	11.5	X	1254	10.8	X	1255	10.2	X
1256	9.66	X	1257	12.19	X	1258	10.5	X	1259	11.0	X	1260	11.9	X
1261	11.0	X	1262	10.25	X	1263	10.50	X	1264	9.1	X	1265	11.0	X
1266	9.41	X	1267	12.1	X	1268	9.12	X	1269	8.82	X	1270	12.5	X
1271	10.6	X	1272	12.8	X	1273	12.8	X	1274	11.82	X	1275	10.72	X
1276	10.4	X	1277	11.05	X	1278	10.8	X	1279	12.51	X	1280	10.33	X
1281	11.6	X	1282	10.0	X	1283	10.3	X	1284	10.24	X	1285	10.6	X
1286	10.88	X	1287	11.07	X	1288	11.41	X	1289	10.73	X	1290	12.5	X
1291	10.33	X	1292	11.3	X	1293	12.0	X	1294	10.2	X	1295	10.6	X
1296	10.9	X	1297	10.8	X	1298	10.7	X	1299	11.8	X	1300	10.9	X
1301	10.8	X	1302	10.6	X	1303	9.0	X	1304	9.1	X	1305	10.65	X
1306	9.71	X	1307	12.25	X	1308	10.8	X	1309	10.2	X	1310	11.45	X
1311	12.2	X	1312	10.8	X	1313	11.8	X	1314	12.68	X	1315	9.8	X
1316	13.3	X	1317	9.91	X	1318	11.9	X	1319	11.1	X	1320	10.4	X
1321	10.28	X	1322	12.16	X	1323	9.9	X	1324	13.4	X	1325	11.9	X
1326	10.92	X	1327	12.1	X	1328	10.31	X	1329	10.90	X	1330	10.17	X
1331	10.14	X	1332	10.2	X	1333	11.4	X	1334	10.0	X	1335	13.8	X
1336	10.66	X	1337	11.06	X	1338	12.7	X	1339	10.81	X	1340	11.1	X
1341	10.58	X	1342	11.35	X	1343	11.1	X	1344	12.8	X	1345	9.73	X
1346	11.25	X	1347	11.6	X	1348	11.4	X	1349	10.2	X	1350	10.78	X
1351	9.6	X	1352	11.1	X	1353	10.4	X	1354	11.3	X	1355	13.05	X
1356	9.9	X	1357	11.03	X	1358	12.2	X	1359	10.50	X	1360	11.0	X

1361	10.8	X	1362	11.18	X	1363	11.6	X	1364	10.6	X	1365	11.7	X
1366	10.45	X	1367	13.0	X	1368	10.92	X	1369	10.0	X	1370	13.8	X
1371	11.4	X	1372	12.2	X	1373	13	X	1374	14.1	X	1375	11.6	X
1376	12.2	X	1377	13.1	X	1378	12.1	X	1379	11.05	X	1380	11.6	X
1381	12.29	X	1382	12.2	X	1383	11.5	X	1384	11.2	X	1385	10.7	X
1386	12.6	X	1387	12.9	X	1388	10.81	X	1389	11.64	X	1390	9.40	X
1391	12.07	X	1392	11.72	X	1393	12.2	X	1394	12.5	X	1395	11.4	X
1396	12.0	X	1397	11.47	X	1398	10.1	X	1399	13.8	X	1400	11.5	X
1401	12.25	X	1402	13.0	X	1403	11.3	X	1404	9.2	X	1405	12.3	X
1406	10.6	X	1407	10.6	X	1408	11.0	X	1409	10.6	X	1410	11.1	X
1411	10.9	X	1412	12.8	X	1413	10.9	X	1414	12.4	X	1415	12.19	X
1416	10.40	X	1417	10.8	X	1418	12.09	X	1419	11.3	X	1420	11.5	X
1421	10.3	X	1422	13.42	X	1423	10.5	X	1424	9.5	X	1425	11.3	X
1426	10.8	X	1427	10.7	X	1428	10.9	X	1429	12.5	X	1430	12.8	X
1431	11.5	X	1432	11.7	X	1433	11.4	X	1434	10.43	X	1435	12.8	X
1436	10.3	X	1437	8.30	X	1438	11.4	X	1439	10.45	X	1440	11.8	X
1441	13.1	X	1442	11.57	X	1443	10.8	X	1444	10.6	X	1445	11.84	X
1446	12.7	X	1447	11.3	X	1448	12.6	X	1449	12.4	X	1450	11.9	X
1451	12.1	X	1452	12.0	X	1453	12.69	X	1454	12.8	X	1455	13.6	X
1456	10.93	X	1457	10.6	X	1458	11.5	X	1459	10.6	X	1460	13.1	X
1461	10.01	X	1462	10.8	X	1463	10.6	X	1464	11.0	X	1465	11.6	X
1466	11.9	X	1467	8.57	X	1468	13.6	X	1469	9.6	X	1470	11.0	X
1471	10.7	X	1472	12.7	X	1473	11.8	X	1474	12.66	X	1475	12.8	X
1476	12.9	X	1477	11.59	X	1478	12.63	X	1479	11.95	X	1480	13.1	X
1481	10.34	X	1482	11.04	X	1483	11.5	X	1484	10.8	X	1485	11.4	X
1486	13.0	X	1487	10.6	X	1488	10.8	X	1489	11.6	X	1490	12.0	X
1491	11.3	X	1492	12.8	X	1493	11.99	X	1494	12.7	X	1495	11.6	X
1496	12.3	X	1497	11.9	X	1498	11.7	X	1499	11.2	X	1500	13.06	X
1501	12.1	X	1502	11.6	X	1503	10.6	X	1504	11.88	X	1505	11.0	X
1506	11.7	X	1507	12.9	X	1508	12.03	X	1509	12.64	X	1510	11.2	X
1511	12.7	X	1512	9.62	X	1513	13.33	X	1514	12.6	X	1515	12.6	X
1516	12.3	X	1517	11.1	X	1518	12.3	X	1519	11.4	X	1520	10.0	X
1521	11.5	X	1522	12.43	X	1523	12.3	X	1524	10.8	X	1525	12.4	X
1526	13.6	X	1527	12.2	X	1528	12.4	X	1529	10.05	X	1530	13.1	X
1531	12.2	X	1532	11.50	X	1533	10.82	X	1534	11.7	X	1535	10.7	X
1536	13.7	X	1537	11.9	X	1538	14.1	X	1539	10.6	X	1540	10.8	X
1541	11.2	X	1542	10.3	X	1543	12.1	X	1544	11.7	X	1545	11.8	X
1546	10.6	X	1547	10.75	X	1548	11.5	X	1549	11.7	X	1550	11.8	X
1551	12.2	X	1552	11.0	X	1553	11.7	X	1554	11.9	X	1555	11.7	X
1556	10.55	X	1557	11.3	X	1558	10.2	X	1559	11.9	X	1560	11.5	X
1561	11.6	X	1562	11.8	X	1563	13.3	X	1564	10.88	X	1565	12.3	X
1566	16.4	X	1567	9.47	X	1568	12.1	X	1569	11.1	X	1570	12.4	X
1571	11.5	X	1572	10.0	X	1573	12.3	X	1574	10.3	X	1575	12.3	X
1576	11.04	X	1577	13.1	X	1578	10.26	X	1579	10.68	X	1580	14.52	00
1581	10.85	X	1582	10.9	X	1583	8.60	X	1584	10.67	X	1585	10.66	X
1586	11.9	X	1587	11.2	X	1588	11.1	X	1589	12.0	X	1590	11.7	X
1591	11.7	X	1592	11.6	X	1593	13.2	X	1594	12.2	X	1595	12.02	X
1596	10.4	X	1597	12.0	X	1598	12.2	X	1599	11.0	X	1600	11.9	X
1601	12.32	X	1602	12.49	X	1603	10.9	X	1604	10.53	X	1605	10.1	X
1606	12.17	X	1607	11.6	X	1608	12.9	X	1609	10.61	X	1610	13.1	X
1611	11.3	X	1612	11.6	X	1613	11.4	X	1614	10.7	X	1615	11.38	X
1616	11.5	X	1617	10.4	X	1618	11.5	X	1619	12.15	X	1620	15.60	X
1621	11.63	X	1622	12.2	X	1623	11.0	X	1624	11.2	X	1625	10.34	X
1626	10.5	X	1627	13.2	60	1628	10.02	X	1629	12.6	X	1630	11.2	X
1631	12.2	X	1632	11.3	X	1633	10.5	X	1634	13.0	X	1635	11.1	X
1636	13.1	X	1637	10.1	X	1638	11.5	X	1639	10.98	X	1640	13.1	X
1641	10.53	X	1642	10.5	X	1643	12.8	X	1644	11.82	X	1645	10.7	X
1646	11.82	X	1647	10.3	X	1648	12.54	X	1649	11.2	X	1650	11.56	X
1651	12.1	X	1652	13.2	X	1653	11.4	X	1654	10.8	X	1655	11.04	X

1656	12.4	X	1657	12.84	X	1658	11.52	X	1659	10.1	X	1660	11.9	X
1661	13.3	X	1662	11.3	X	1663	12.2	X	1664	12.1	X	1665	11.85	X
1666	12.7	X	1667	12.1	X	1668	12.2	X	1669	10.97	X	1670	11.38	X
1671	12.0	X	1672	11.1	X	1673	11.6	X	1674	11.06	X	1675	11.9	X
1676	12.7	X	1677	11.9	X	1678	10.9	X	1679	10.6	X	1680	11.2	X
1681	11.56	X	1682	12.9	X	1683	11.6	X	1684	10.8	X	1685	14.23	X
1686	10.9	X	1687	10.25	X	1688	12.5	X	1689	11.82	X	1690	10.9	X
1691	10.95	X	1692	11.1	X	1693	10.97	X	1694	11.46	X	1695	12.4	X
1696	12.9	X	1697	12.6	X	1698	11.2	X	1699	12.5	X	1700	12.47	X
1701	10.3	X	1702	11.03	X	1703	12.4	X	1704	13.3	X	1705	12.8	X
1706	12.8	X	1707	12.54	X	1708	11.8	X	1709	12.75	X	1710	13.3	X
1711	11.01	X	1712	9.8	X	1713	13.3	X	1714	11.9	X	1715	12.1	X
1716	11.4	X	1717	12.9	X	1718	13.5	X	1719	11.3	X	1720	13.2	X
1721	10.8	X	1722	12.30	X	1723	10.06	X	1724	11.30	X	1725	10.9	X
1726	12.1	X	1727	12.7	X	1728	11.1	X	1729	12.5	X	1730	11.5	X
1731	10.0	X	1732	11.1	X	1733	13.0	X	1734	11.7	X	1735	9.4	X
1736	12.2	X	1737	10.8	X	1738	12.3	X	1739	12.9	X	1740	13.24	X
1741	11.2	X	1742	11.82	X	1743	12.48	X	1744	13.6	X	1745	12.0	X
1746	9.95	X	1747	13.35	X	1748	10.65	X	1749	9.2	X	1750	13.15	X
1751	12.2	X	1752	13.2	X	1753	11.1	X	1754	9.77	X	1755	10.77	X
1756	12.2	X	1757	13.36	X	1758	10.9	X	1759	13.15	X	1760	11.5	X
1761	11.4	X	1762	11.8	X	1763	12.6	X	1764	11.2	X	1765	9.92	X
1766	11.7	X	1767	12.20	X	1768	12.70	X	1769	13.7	X	1770	12.2	X
1771	10.1	X	1772	12.82	X	1773	11.9	X	1774	12.5	X	1775	12.1	X
1776	11.0	X	1777	11.1	X	1778	11.6	X	1779	14.2	X	1780	10.68	X
1781	12.7	X	1782	11.3	X	1783	11.8	X	1784	12.3	X	1785	12.7	X
1786	11.4	X	1787	11.7	X	1788	11.9	X	1789	13.0	X	1790	12.5	X
1791	11.8	X	1792	12.03	X	1793	12.6	X	1794	11.08	X	1795	11.8	X
1796	9.84	X	1797	12.3	X	1798	12.8	X	1799	10.9	X	1800	12.6	X
1801	11.0	X	1802	11.9	X	1803	12.0	X	1804	11.7	X	1805	11.0	X
1806	12.0	X	1807	12.1	X	1808	12.1	X	1809	12.1	X	1810	12.3	X
1811	10.7	X	1812	11.3	X	1813	11.6	X	1814	13.8	X	1815	11.36	X
1816	12.3	X	1817	11.8	X	1818	14.7	X	1819	10.2	X	1820	13.0	X
1821	13.3	X	1822	13.6	X	1823	12.9	X	1824	11.4	X	1825	11.8	X
1826	10.9	X	1827	12.39	X	1828	10.9	X	1829	12.5	X	1830	12.45	X
1831	12.8	X	1832	11.0	X	1833	11.98	X	1834	11.5	X	1835	11.5	X
1836	11.3	X	1837	12.9	X	1838	10.6	X	1839	11.8	X	1840	11.6	X
1841	10.8	X	1842	12.41	X	1843	11.6	X	1844	11.0	X	1845	11.3	X
1846	13.1	X	1847	11.0	X	1848	10.9	X	1849	11.6	X	1850	12.8	X
1851	12.3	X	1852	11.1	X	1853	10.5	X	1854	12.3	X	1855	12.5	X
1856	12.6	X	1857	12.3	X	1858	11.5	X	1859	10.2	X	1860	11.7	X
1861	11.8	X	1862	16.25	09	1863	15.54	X	1864	14.85	X	1865	16.84	X
1866	13.0	X	1867	8.61	X	1868	9.3	X	1869	11.0	X	1870	11.5	X
1871	11.0	X	1872	11.2	X	1873	10.5	X	1874	11.0	X	1875	12.4	X
1876	14.7	X	1877	10.7	X	1878	11.5	X	1879	12.5	X	1880	12.1	X
1881	11.1	X	1882	11.1	X	1883	13.1	X	1884	11.7	X	1885	13.7	X
1886	11.9	X	1887	11.3	X	1888	11.7	X	1889	10.8	X	1890	10.8	X
1891	12.0	X	1892	12.10	X	1893	11.9	X	1894	11.9	X	1895	11.8	X
1896	14.0	X	1897	13.4	X	1898	11.9	X	1899	13.3	X	1900	12.2	X
1901	11.2	X	1902	9.51	X	1903	10.5	X	1904	11.3	X	1905	13.5	X
1906	12.7	X	1907	11.8	X	1908	11.7	X	1909	12.3	X	1910	10.7	X
1911	10.11	X	1912	11.4	X	1913	11.5	X	1914	12.4	X	1915	18.97	10
1916	14.93	X	1917	13.9	X	1918	12.2	X	1919	13.45	X	1920	14.17	X
1921	14.3	X	1922	11.6	X	1923	13.1	X	1924	12.8	X	1925	12.0	X
1926	11.6	X	1927	11.6	X	1928	12.68	X	1929	12.2	X	1930	10.9	X
1931	13.2	X	1932	13.6	X	1933	12.9	X	1934	12.8	X	1935	13.0	X
1936	11.1	X	1937	11.9	X	1938	13.0	X	1939	10.8	X	1940	11.0	X
1941	11.5	X	1942	13.0	X	1943	15.75	X	1944	14.4	X	1945	12.2	X
1946	11.9	X	1947	10.8	X	1948	11.8	X	1949	13.4	X	1950	12.5	X

1951 14.7 X	1952 10.32 X	1953 11.8 X	1954 11.3 X	1955 11.9 X
1956 11.9 X	1957 11.36 X	1958 10.7 X	1959 12.9 X	1960 11.93 X
1961 10.6 X	1962 11.9 X	1963 10.91 X	1964 13.2 X	1965 11.9 X
1966 13.5 X	1967 12.3 X	1968 11.5 X	1969 11.6 X	1970 12.0 X
1971 12.1 X	1972 13.38 21	1973 11.6 X	1974 11.9 X	1975 11.9 X
1976 13.5 X	1977 11.4 X	1978 13.0 X	1979 13.5 X	1980 13.92 X
1981 15.0 X	1982 12.5 X	1983 12.6 X	1984 11.1 X	1985 10.8 X
1986 11.8 X	1987 11.4 X	1988 13.6 X	1989 12.1 X	1990 13.14 X
1991 12.9 X	1992 12.8 X	1993 11.3 X	1994 11.6 X	1995 12.8 X
1996 12.1 X	1997 13.4 X	1998 12.2 X	1999 10.6 X	2000 11.25 X
2001 12.85 X	2002 12.1 X	2003 11.7 X	2004 12.6 X	2005 12.2 X
2006 12.6 X	2007 11.8 X	2008 10.3 X	2009 10.8 X	2010 11.62 X
2011 12.9 X	2012 13.2 X	2013 12.6 X	2014 11.7 X	2015 11.7 X
2016 11.4 X	2017 12.78 X	2018 14.5 X	2019 11.9 X	2020 11.4 X
2021 13.3 X	2022 12.0 X	2023 11.6 X	2024 12.9 X	2025 10.5 X
2026 12.8 X	2027 11.0 X	2028 14 X	2029 13.5 X	2030 13.5 X
2031 13.0 X	2032 11.9 X	2033 13.2 X	2034 12.9 X	2035 12.61 X
2036 12.7 X	2037 13.5 X	2038 12.3 X	2039 12.8 X	2040 11.1 X
2041 12.2 X	2042 12.8 X	2043 10.8 X	2044 13 X	2045 12.2 X
2046 11.5 X	2047 13.9 X	2048 13.50 X	2049 14.9 X	2050 12.68 X
2051 11.9 X	2052 10.48 X	2053 11.9 X	2054 12.0 X	2055 13.5 X
2056 12.3 X	2057 11.9 X	2058 11.0 X	2059 15.8 X	2060 6.0 X
2061 16.56 X	2062 16.80 X	2063 16.4 X	2064 12.53 X	2065 12.2 X
2066 12.5 X	2067 10.48 X	2068 11.5 X	2069 11.1 X	2070 13.9 X
2071 13.3 X	2072 12.61 X	2073 12.7 X	2074 14.0 X	2075 13.6 X
2076 14.4 X	2077 14.1 X	2078 12.1 X	2079 12.7 X	2080 13.1 X
2081 12.14 X	2082 13.3 X	2083 13.27 X	2084 12.2 X	2085 11.4 X
2086 12.4 X	2087 13.1 X	2088 12.42 X	2089 10.98 X	2090 10.99 X
2091 10.2 X	2092 11.9 X	2093 12.6 X	2094 12.0 X	2095 12.4 X
2096 13.3 X	2097 11.9 X	2098 12.5 X	2099 15.18 X	2100 16.05 12
2101 18.7 X	2102 15.3 X	2103 10.8 X	2104 9.8 X	2105 10.7 X
2106 11.7 X	2107 11.4 X	2108 11.5 X	2109 11.91 X	2110 13.8 X
2111 10.45 X	2112 12.8 X	2113 13.17 X	2114 11.1 X	2115 11.0 X
2116 12.1 X	2117 11.7 X	2118 12.0 X	2119 12.8 X	2120 10.4 X
2121 12.3 X	2122 12.1 X	2123 11.5 X	2124 11.7 X	2125 12.4 X
2126 12.4 X	2127 10.7 X	2128 13.6 X	2129 13.7 X	2130 13.5 X
2131 12.72 X	2132 11.4 X	2133 13.3 X	2134 12.71 X	2135 17.94 X
2136 11.6 X	2137 11.1 X	2138 12.0 X	2139 12.80 X	2140 10.9 X
2141 11.3 X	2142 12.1 X	2143 11.2 X	2144 11.0 X	2145 10.6 X
2146 10.2 X	2147 11.7 X	2148 11.1 X	2149 11.7 X	2150 13.4 X
2151 11.1 X	2152 10.5 X	2153 11.9 X	2154 12.7 X	2155 12.6 X
2156 12.69 X	2157 11.4 X	2158 11.8 X	2159 12.07 X	2160 12.1 X
2161 12.4 X	2162 13.0 X	2163 11.7 X	2164 11.8 X	2165 11.0 X
2166 14.3 X	2167 12.1 X	2168 12.8 X	2169 12.0 X	2170 13.9 X
2171 13.6 X	2172 12.1 X	2173 11.4 X	2174 11.6 X	2175 14.2 X
2176 12.3 X	2177 11.3 X	2178 13.4 X	2179 11.5 X	2180 11.0 X
2181 12.1 X	2182 11.3 X	2183 11.5 X	2184 11.5 X	2185 11.3 X
2186 12.3 X	2187 13.0 X	2188 11.9 X	2189 12.3 X	2190 13.56 X
2191 11.3 X	2192 11.3 X	2193 10.3 X	2194 12.6 X	2195 12.6 X
2196 10.25 X	2197 11.2 X	2198 14.3 X	2199 13.1 X	2200 13.4 X
2201 15.25 X	2202 16.8 X	2203 11.5 X	2204 11.6 X	2205 11.8 X
2206 11.3 X	2207 8.89 X	2208 10.96 X	2209 10.9 X	2210 14.3 X
2211 13.9 X	2212 13.87 X	2213 13.7 X	2214 12.0 X	2215 11.9 X
2216 10.8 X	2217 10.8 X	2218 11.2 X	2219 10.7 X	2220 10.9 X
2221 12.8 X	2222 11.4 X	2223 9.41 X	2224 11.7 X	2225 12.1 X
2226 11.6 X	2227 13.8 X	2228 10.9 X	2229 13.1 X	2230 12.3 X
2231 12.4 X	2232 12.0 X	2233 12.7 X	2234 12.5 X	2235 10.7 X
2236 12.3 X	2237 11.3 X	2238 11.9 X	2239 11.5 X	2240 11.8 X
2241 8.64 X	2242 13.8 X	2243 12.8 X	2244 11.9 X	2245 11.3 X

2246	10.56	X	2247	13.9	X	2248	11.2	X	2249	11.0	X	2250	11.5	X
2251	11.4	X	2252	11.9	X	2253	12.9	X	2254	12.5	X	2255	11.3	X
2256	11.8	X	2257	12.9	X	2258	11.4	X	2259	12.6	X	2260	9.31	X
2261	12.8	X	2262	12.6	X	2263	10.9	X	2264	10.5	X	2265	13.1	X
2266	10.80	X	2267	13.9	X	2268	11.4	X	2269	10.5	X	2270	10.9	X
2271	11.6	X	2272	13.94	X	2273	13.3	X	2274	12.3	X	2275	13.2	X
2276	12.9	X	2277	12.2	X	2278	14.3	X	2279	12.97	X	2280	13.5	X
2281	13.7	X	2282	13.2	X	2283	12.7	X	2284	12.7	X	2285	14.3	X
2286	13.0	X	2287	13.0	X	2288	11.0	X	2289	13.6	X	2290	12.2	X
2291	10.8	X	2292	11.7	X	2293	10.9	X	2294	11.5	X	2295	12.0	X
2296	11.3	X	2297	11.0	X	2298	12.9	X	2299	13.3	X	2300	11.9	X
2301	10.8	X	2302	12.1	X	2303	11.0	X	2304	12.4	X	2305	11.8	X
2306	11.4	X	2307	10.9	X	2308	11.8	X	2309	11.3	X	2310	11.3	X
2311	10.52	X	2312	10.18	X	2313	12.9	X	2314	12.8	X	2315	10.7	X
2316	12.7	X	2317	13.42	X	2318	13.8	X	2319	12.2	X	2320	10.5	X
2321	11.5	X	2322	12.7	X	2323	10.7	X	2324	11.3	X	2325	11.9	X
2326	11.1	X	2327	13.9	X	2328	12.5	X	2329	14.9	X	2330	11.3	X
2331	12.2	X	2332	10.6	X	2333	11.5	X	2334	13.5	X	2335	12.9	X
2336	11.4	X	2337	12.0	X	2338	11.9	X	2339	13.49	X	2340	20.26	X
2341	12.5	X	2342	11.7	X	2343	13.4	X	2344	12.1	X	2345	10.80	X
2346	11.9	X	2347	11.3	X	2348	12.4	X	2349	11.9	X	2350	13.4	X
2351	12.8	X	2352	11.1	X	2353	11.8	X	2354	11.8	X	2355	11.4	X
2356	10.8	X	2357	8.94	X	2358	11.0	X	2359	12.9	X	2360	12.4	X
2361	11.7	X	2362	13.7	X	2363	9.11	X	2364	10.7	X	2365	11.7	X
2366	13.8	X	2367	13.2	X	2368	15.21	X	2369	11.8	X	2370	12.6	X
2371	12.5	X	2372	11.6	X	2373	12.5	X	2374	11.5	X	2375	10.61	X
2376	10.9	X	2377	12.0	X	2378	10.7	X	2379	10.90	X	2380	13.2	X
2381	11.4	X	2382	11.4	X	2383	13.4	X	2384	12.2	X	2385	13.2	X
2386	12.2	X	2387	11.3	X	2388	12.9	X	2389	12.9	X	2390	12.2	X
2391	12.4	X	2392	13.2	X	2393	10.5	X	2394	11.6	X	2395	12.6	X
2396	11.6	X	2397	10.9	X	2398	13.6	X	2399	13.2	X	2400	11.9	X
2401	12.2	X	2402	13.2	X	2403	12.5	X	2404	11.4	X	2405	12.09	X
2406	13.5	X	2407	10.77	X	2408	12.5	X	2409	13.2	X	2410	13.0	X
2411	12.75	X	2412	12.0	X	2413	10.8	X	2414	10.91	X	2415	12.0	X
2416	11.4	X	2417	11.8	X	2418	12.5	X	2419	13.6	X	2420	12.2	X
2421	10.8	X	2422	13.7	X	2423	13.2	X	2424	12.9	X	2425	11.1	X
2426	11.4	X	2427	12.8	X	2428	11.0	X	2429	12.2	X	2430	12.24	X
2431	12.8	X	2432	12.8	X	2433	11.8	X	2434	11.1	X	2435	14.9	X
2436	12.1	X	2437	13.1	X	2438	12.9	X	2439	11.5	X	2440	13.1	X
2441	13.9	X	2442	12.8	X	2443	10.2	X	2444	11.8	X	2445	12.9	X
2446	12.9	X	2447	13.0	X	2448	10.4	X	2449	14.26	X	2450	11.3	X
2451	12.1	X	2452	11.9	X	2453	11.2	X	2454	13.5	X	2455	11.7	X
2456	9.6	X	2457	12.7	X	2458	11.8	X	2459	12.0	X	2460	12.5	X
2461	11.4	X	2462	14.8	X	2463	11.8	X	2464	11.5	X	2465	12.0	X
2466	12.1	X	2467	13.0	X	2468	12.4	X	2469	11.6	X	2470	12.0	X
2471	11.9	X	2472	13.1	X	2473	13.2	X	2474	11.8	X	2475	11.2	X
2476	10.9	X	2477	12.4	X	2478	12.8	X	2479	13.1	X	2480	12.8	X
2481	13.8	X	2482	12.7	X	2483	10.8	X	2484	13.0	X	2485	12.8	X
2486	12.4	X	2487	13.2	X	2488	13.9	X	2489	12.0	X	2490	11.9	X
2491	13.68	X	2492	11.3	X	2493	12.5	X	2494	10.6	X	2495	15.5	X
2496	13.5	X	2497	12.9	X	2498	12.0	X	2499	12.1	X	2500	12.8	X
2501	12.08	X	2502	11.7	X	2503	13.9	X	2504	12.1	X	2505	11.3	X
2506	11.9	X	2507	11.7	X	2508	13.5	X	2509	12.6	X	2510	12.60	X
2511	12.5	X	2512	12.7	X	2513	13.4	X	2514	12.9	X	2515	12.6	X
2516	13.7	X	2517	11.7	X	2518	13.4	X	2519	11.3	X	2520	12.0	X
2521	11.7	X	2522	11.6	X	2523	11.5	X	2524	10.9	X	2525	10.5	X
2526	11.9	X	2527	13.0	X	2528	12.6	X	2529	12.7	X	2530	11.7	X
2531	10.9	X	2532	12.7	X	2533	11.7	X	2534	10.9	X	2535	12.5	X
2536	13.0	X	2537	12.7	X	2538	13.7	X	2539	14.3	X	2540	13.1	X

2541	12.1	X	2542	11.4	X	2543	11.7	X	2544	13.0	X	2545	13.0	X
2546	12.0	X	2547	14.0	X	2548	12.8	X	2549	12.7	X	2550	11.2	X
2551	12.1	X	2552	14.6	X	2553	11.3	X	2554	13.0	X	2555	11.9	X
2556	13.4	X	2557	12.5	X	2558	13.3	X	2559	12.4	X	2560	11.7	X
2561	13.3	X	2562	11.3	X	2563	11.3	X	2564	13.3	X	2565	14.5	X
2566	12.6	X	2567	11.8	X	2568	13.1	X	2569	11.2	X	2570	12.2	X
2571	13.0	X	2572	13.4	X	2573	11.4	X	2574	11.3	X	2575	12.6	X
2576	11.3	X	2577	13.18	X	2578	11.4	X	2579	13.0	X	2580	13.3	X
2581	13.3	X	2582	10.5	X	2583	13.0	X	2584	13.3	X	2585	12.5	X
2586	12.9	X	2587	11.2	X	2588	13.2	X	2589	12.4	X	2590	12.7	X
2591	11.4	X	2592	11.6	X	2593	14.3	X	2594	11.5	X	2595	12.2	X
2596	12.8	X	2597	11.9	X	2598	12.6	X	2599	11.2	X	2600	11.4	X
2601	11.2	X	2602	13.0	X	2603	12.2	X	2604	12.9	X	2605	12.7	X
2606	11.3	X	2607	13.4	X	2608	17.52	X	2609	13.3	X	2610	13.3	X
2611	12.2	X	2612	10.8	X	2613	11.2	X	2614	13.3	X	2615	12.2	X
2616	12.5	X	2617	10.4	X	2618	12.0	X	2619	12.8	X	2620	12.7	X
2621	10.7	X	2622	11.7	X	2623	13.1	X	2624	10.7	X	2625	13.1	X
2626	11.7	X	2627	12.0	X	2628	12.7	X	2629	14.5	X	2630	11.8	X
2631	12.0	X	2632	11.4	X	2633	13.1	X	2634	10.2	X	2635	12.9	X
2636	11.0	X	2637	13.2	X	2638	12.1	X	2639	12.9	X	2640	13.0	X
2641	12.7	X	2642	12.7	X	2643	15.0	X	2644	13.8	X	2645	12.3	X
2646	11.6	X	2647	12.5	X	2648	12.9	X	2649	11.8	X	2650	11.5	X
2651	12.3	X	2652	14.1	X	2653	12.1	X	2654	12.5	X	2655	11.2	X
2656	13.5	X	2657	11.6	X	2658	12.4	X	2659	11.2	X	2660	12.1	X
2661	11.3	X	2662	14.4	X	2663	14.0	X	2664	13.8	X	2665	13.2	X
2666	11.7	X	2667	12.2	X	2668	13.3	X	2669	12.6	X	2670	10.5	X
2671	13.4	X	2672	11.7	X	2673	12.5	X	2674	9.62	X	2675	12.5	X
2676	12.8	X	2677	11.6	X	2678	12.4	X	2679	11.9	X	2680	13.5	X
2681	12.3	X	2682	13.8	X	2683	11.8	X	2684	11.6	X	2685	12.2	X
2686	11.6	X	2687	11.89	X	2688	11.6	X	2689	13.9	X	2690	11.1	X
2691	13.4	X	2692	12.3	X	2693	13.3	X	2694	13.8	X	2695	12.3	X
2696	12.0	X	2697	10.2	X	2698	11.9	X	2699	11.7	X	2700	12.1	X
2701	12.5	X	2702	11.0	X	2703	13.5	X	2704	13.2	X	2705	13.6	X
2706	11.9	X	2707	11.6	X	2708	11.8	X	2709	13.3	X	2710	13.5	X
2711	11.5	X	2712	14.3	X	2713	11.5	X	2714	13.4	X	2715	11.9	X
2716	13.3	X	2717	12.6	X	2718	11.7	X	2719	13.5	X	2720	13.9	X
2721	12.0	X	2722	12.1	X	2723	12.5	X	2724	11.7	X	2725	10.4	X
2726	12.5	X	2727	12.3	X	2728	12.4	X	2729	11.4	X	2730	11.6	X
2731	10.7	X	2732	12.1	X	2733	13.2	X	2734	11.4	X	2735	14.32	X
2736	12.8	X	2737	11.9	X	2738	12.2	X	2739	13.2	X	2740	11.7	X
2741	12.0	X	2742	12.1	X	2743	12.6	X	2744	14.78	X	2745	13.2	X
2746	13.4	X	2747	11.6	X	2748	12.7	X	2749	12.1	X	2750	13.1	X
2751	12.7	X	2752	11.4	X	2753	12.3	X	2754	13.5	X	2755	11.7	X
2756	13.0	X	2757	11.3	X	2758	13.7	X	2759	9.8	X	2760	10.04	X
2761	12.1	X	2762	13.2	X	2763	12.6	X	2764	13.6	X	2765	11.8	X
2766	13.0	X	2767	11.6	X	2768	12.3	X	2769	12.1	X	2770	13.0	X
2771	12.0	X	2772	13.4	X	2773	13.3	X	2774	11.1	X	2775	13.6	X
2776	12.5	X	2777	13.1	X	2778	13.0	X	2779	13.3	X	2780	13.3	X
2781	11.7	X	2782	13.6	X	2783	13.2	X	2784	13.4	X	2785	12.2	X
2786	12.0	X	2787	11.3	X	2788	13.3	X	2789	13.6	X	2790	12.8	X
2791	12.24	X	2792	13.3	X	2793	10.8	X	2794	12.7	X	2795	13.2	X
2796	12.3	X	2797	8.4	X	2798	13.1	X	2799	14.5	X	2800	12.8	X
2801	12.2	X	2802	11.0	X	2803	11.8	X	2804	11.7	X	2805	12.2	X
2806	13.3	X	2807	12.6	X	2808	11.0	X	2809	13.60	X	2810	12.6	X
2811	11.9	X	2812	13.5	X	2813	11.0	X	2814	12.6	X	2815	13.2	X
2816	11.7	X	2817	13.9	X	2818	13.7	X	2819	12.2	X	2820	12.9	X
2821	13.4	X	2822	12.4	X	2823	13.2	X	2824	13.8	X	2825	13.4	X
2826	10.8	X	2827	12.0	X	2828	13.3	X	2829	10.3	X	2830	12.64	X
2831	12.6	X	2832	12.6	X	2833	12.2	X	2834	12.0	X	2835	12.1	X

2836	11.4	X	2837	11.9	X	2838	14.6	X	2839	12.3	X	2840	12.8	X
2841	12.7	X	2842	12.0	X	2843	13.0	X	2844	13.4	X	2845	13.4	X
2846	10.7	X	2847	12.5	X	2848	11.1	X	2849	12.7	X	2850	11.9	X
2851	12.3	X	2852	12.3	X	2853	13.4	X	2854	13.2	X	2855	13.0	X
2856	11.0	X	2857	12.7	X	2858	13.7	X	2859	13.5	X	2860	12.6	X
2861	12.4	X	2862	12.8	X	2863	12.0	X	2864	12.5	X	2865	11.4	X
2866	11.9	X	2867	12.9	X	2868	13.1	X	2869	12.1	X	2870	12.8	X
2871	12.9	X	2872	12.4	X	2873	12.99	X	2874	13.2	X	2875	12.2	X
2876	12.9	X	2877	12.1	X	2878	11.7	X	2879	11.7	X	2880	12.6	X
2881	13.4	X	2882	11.9	X	2883	13.3	X	2884	11.8	X	2885	14.1	X
2886	13.2	X	2887	13.0	X	2888	13.1	X	2889	11.5	X	2890	12.9	X
2891	11.2	X	2892	10.2	X	2893	9.23	X	2894	12.1	X	2895	9.3	X
2896	12.7	X	2897	13.4	X	2898	12.5	X	2899	13.5	X	2900	12.3	X
2901	11.9	X	2902	14.4	X	2903	12.0	X	2904	11.6	X	2905	12.1	X
2906	10.0	X	2907	11.5	X	2908	11.5	X	2909	10.9	X	2910	13.8	X
2911	11.3	X	2912	12.7	X	2913	12.6	X	2914	13.8	X	2915	13.3	X
2916	13.4	X	2917	12.0	X	2918	11.9	X	2919	11.6	X	2920	8.8	X
2921	13.3	X	2922	13.7	X	2923	13.6	X	2924	12.7	X	2925	14.0	X
2926	13.3	X	2927	12.1	X	2928	11.3	X	2929	11.6	X	2930	12.4	X
2931	11.7	X	2932	11.6	X	2933	11.7	X	2934	11.2	X	2935	13.0	X
2936	12.4	X	2937	12.9	X	2938	11.5	X	2939	12.6	X	2940	14.0	X
2941	13.9	X	2942	13.2	X	2943	12.8	X	2944	12.8	X	2945	12.2	X
2946	13.0	X	2947	13.0	X	2948	12.5	X	2949	13.3	X	2950	11.9	X
2951	10.0	X	2952	14.1	X	2953	11.6	X	2954	13.5	X	2955	13.5	X
2956	12.4	X	2957	10.2	X	2958	12.2	X	2959	11.2	X	2960	14.2	X
2961	13.0	X	2962	11.3	X	2963	12.3	X	2964	12.2	X	2965	13.6	X
2966	13.4	X	2967	11.0	X	2968	14.3	X	2969	12.6	X	2970	12.5	X
2971	13.5	X	2972	13.9	X	2973	12.9	X	2974	13.9	X	2975	12.7	X
2976	10.9	X	2977	12.7	X	2978	11.7	X	2979	12.1	X	2980	13.2	X
2981	12.0	X	2982	11.9	X	2983	11.2	X	2984	13.1	X	2985	12.1	X
2986	11.9	X	2987	12.1	X	2988	11.7	X	2989	13.2	X	2990	13.4	X
2991	13.5	X	2992	13.0	X	2993	12.3	X	2994	13.9	X	2995	12.4	X
2996	11.8	X	2997	13.5	X	2998	14.3	X	2999	13.4	X	3000	13.0	X
3001	12.4	X	3002	12.8	X	3003	11.3	X	3004	14.3	X	3005	13.7	X
3006	13.5	X	3007	12.4	X	3008	12.0	X	3009	14.1	X	3010	12.2	X
3011	11.9	X	3012	11.1	X	3013	13.3	X	3014	13.0	X	3015	11.1	X
3016	12.4	X	3017	12.2	X	3018	12.8	X	3019	11.7	X	3020	12.2	X
3021	11.9	X	3022	13.4	X	3023	13.6	X	3024	10.7	X	3025	11.6	X
3026	11.9	X	3027	13.3	X	3028	10.7	X	3029	13.0	X	3030	14.3	X
3031	13.0	X	3032	11.4	X	3033	13.0	X	3034	12.3	X	3035	12.4	X
3036	9.8	X	3037	11.6	X	3038	13.7	X	3039	12.5	X	3040	14.5	X
3041	12.5	X	3042	13.8	X	3043	13.6	X	3044	12.0	X	3045	11.4	X
3046	12.2	X	3047	12.7	X	3048	13.4	X	3049	11.6	X	3050	14.1	X
3051	12.8	X	3052	13.1	X	3053	12.9	X	3054	11.3	X	3055	12.5	X
3056	12.9	X	3057	13.4	X	3058	14.3	X	3059	13.7	X	3060	13.4	X
3061	11.9	X	3062	10.8	X	3063	8.6	X	3064	13.0	X	3065	11.8	X
3066	11.2	X	3067	13.0	X	3068	13.2	X	3069	13.8	X	3070	13.8	X
3071	11.8	X	3072	14.0	X	3073	13.5	X	3074	13.6	X	3075	13.9	X
3076	13.7	X	3077	12.7	X	3078	11.6	X	3079	13.3	X	3080	11.7	X
3081	13.8	X	3082	12.3	X	3083	13.8	X	3084	13.2	X	3085	13.1	X
3086	13.6	X	3087	12.8	X	3088	11.8	X	3089	11.0	X	3090	12.1	X
3091	14.9	X	3092	11.0	X	3093	11.5	X	3094	12.0	X	3095	11.3	X
3096	12.7	X	3097	12.1	X	3098	14.7	X	3099	11.4	X	3100	13.9	X
3101	13.2	X	3102	16.70	X	3103	15.38	X	3104	11.1	X	3105	13.1	X
3106	10.8	X	3107	13.8	X	3108	13.9	X	3109	11.6	X	3110	13.2	X
3111	13.9	X	3112	12.9	X	3113	13.2	X	3114	13.5	X	3115	11.3	X
3116	12.5	X	3117	12.3	X	3118	10.9	X	3119	12.2	X	3120	11.6	X
3121	13.4	X	3122	14.2	X	3123	13.54	X	3124	13.46	X	3125	12.3	X
3126	11.5	X	3127	12.2	X	3128	11.5	X	3129	12.4	X	3130	12.8	X

3131	12.7	X	3132	11.6	X	3133	13.2	X	3134	10.7	X	3135	14.0	X
3136	11.8	X	3137	13.4	X	3138	13.4	X	3139	9.9	X	3140	10.9	X
3141	10.5	X	3142	12.3	X	3143	12.6	X	3144	13.6	X	3145	14.4	X
3146	13.2	X	3147	13.7	X	3148	11.8	X	3149	14.0	X	3150	11.0	X
3151	12.1	X	3152	11.3	X	3153	13.3	X	3154	12.6	X	3155	12.6	X
3156	11.3	X	3157	11.5	X	3158	12.5	X	3159	13.0	X	3160	13.5	X
3161	12.1	X	3162	11.3	X	3163	13.6	X	3164	11.9	X	3165	12.8	X
3166	13.0	X	3167	11.4	X	3168	11.8	X	3169	12.7 ³	X	3170	12.0	X
3171	10.8	X	3172	13.4	X	3173	13.2	X	3174	11.8	X	3175	14.1	X
3176	10.9	X	3177	11.9	X	3178	11.9	X	3179	11.9	X	3180	14.6	X
3181	12.8	X	3182	12.2	X	3183	12.7	X	3184	12.1	X	3185	14.0	X
3186	12.3	X	3187	13.2	X	3188	14.1	X	3189	12.6	X	3190	12.8	X
3191	12.1	X	3192	13.7	X	3193	13.4	X	3194	12.0	X	3195	12.4	X
3196	12.3	X	3197	11.7	X	3198	12.3	X	3199	14.8 ⁴	X	3200	14.6	X
3201	13.7	X	3202	10.3	X	3203	13.7	X	3204	12.1	X	3205	13.5	X
3206	13.6	X	3207	12.0	X	3208	12.1	X	3209	13.4	X	3210	11.2	X
3211	12.7	X	3212	13.9	X	3213	11.9	X	3214	10.8	X	3215	12.1	X
3216	14.0	X	3217	14.4	X	3218	14.1	X	3219	11.7	X	3220	13.3	X
3221	13.3	X	3222	11.4	X	3223	11.2	X	3224	11.5	X	3225	13.5	X
3226	13.4	X	3227	12.4	X	3228	12.6	X	3229	12.5	X	3230	12.3	X
3231	13.1	X	3232	11.8	X	3233	12.9	X	3234	12.5	X	3235	13.1	X
3236	13.7	X	3237	10.6	X	3238	13.2	X	3239	14.3	X	3240	10.1	X
3241	12.2	X	3242	12.4	X	3243	11.6	X	3244	13.9	X	3245	13.4	X
3246	11.4	X	3247	13.0	X	3248	10.8	X	3249	13.7	X	3250	11.5	X
3251	12.9	X	3252	11.9	X	3253	13.5	X	3254	11.1	X	3255	13.7	X
3256	12.3	X	3257	13.5	X	3258	13.4	X	3259	9.9	X	3260	12.6	X
3261	11.6	X	3262	10.8	X	3263	13.0	X	3264	12.2	X	3265	13.3	X
3266	13.6	X	3267	13.0	X	3268	13.0 ²	X	3269	12.8	X	3270	14.5	X
3271	16.8	X	3272	13.2	X	3273	11.9	X	3274	12.1	X	3275	13.3	X
3276	12.0	X	3277	11.3	X	3278	11.2	X	3279	13.6	X	3280	12.2	X
3281	12.6	X	3282	13.3	X	3283	13.0	X	3284	13.0	X	3285	12.3	X
3286	12.9	X	3287	14.2	X	3288	15	X	3289	14.2	X	3290	11.7	X
3291	12.4	X	3292	12.4	X	3293	14.0	X	3294	12.7	X	3295	12.7	X
3296	12.0	X	3297	12.3	X	3298	13.4	X	3299	13.5	X	3300	10.4	X
3301	13.1	X	3302	12.9	X	3303	11.6	X	3304	13.1	X	3305	12.2	X
3306	12.7	X	3307	13.8	X	3308	11.8	X	3309	13.8	X	3310	10.8	X
3311	12.1	X	3312	11.5	X	3313	11.9	X	3314	13.0	X	3315	12.4	X
3316	11.7	X	3317	8.4	X	3318	11.0	X	3319	12.1	X	3320	13.4	X
3321	13.0	X	3322	12.1	X	3323	13.6	X	3324	11.8	X	3325	11.4	X
3326	12.7	X	3327	12.1	X	3328	11.7	X	3329	11.4	X	3330	11.2	X
3331	13.2	X	3332	11.7	X	3333	11.6	X	3334	12.0	X	3335	11.4	X
3336	14.5	X	3337	12.5	X	3338	14.5	X	3339	10.9	X	3340	13.6	X
3341	12.4	X	3342	11.9	X	3343	13.4	X	3344	12.9	X	3345	11.7	X
3346	11.1	X	3347	11.8	X	3348	11.9	X	3349	12.8	X	3350	14.3	X
3351	13.0	X	3352	15.6	X	3353	13.3	X	3354	13.1	X	3355	13.5	X
3356	13.3	X	3357	11.4	X	3358	12.3	X	3359	14.1	X	3360	16.2	X
3361	19.0 ³	X	3362	18.1	X	3363	12.0	X	3364	13.0	X	3365	12.1	X
3366	11.4	X	3367	12.2	X	3368	11.3	X	3369	12.1	X	3370	13.8	X
3371	12.3	X	3372	12.1	X	3373	13.6	X	3374	12.8	X	3375	13.7	X
3376	12.4	X	3377	12.6	X	3378	13.2	X	3379	13.3	X	3380	12.0	X
3381	13.2	X	3382	13.1	X	3383	12.6	X	3384	13.6	X	3385	12.8	X
3386	12.7	X	3387	12.7	X	3388	13.2	X	3389	12.6	X	3390	13.4	X
3391	10.3	X	3392	14.3	X	3393	12.7	X	3394	13.3	X	3395	11.7	X
3396	11.0	X	3397	14.2	X	3398	13.9	X	3399	12.4	X	3400	14.1	X
3401	12.8	X	3402	15.3	X	3403	12.9	X	3404	12.8	X	3405	12.3	X
3406	11.3	X	3407	12.6	X	3408	13.2	X	3409	12.0	X	3410	13.2	X
3411	13.5	X	3412	13.5	X	3413	13.4	X	3414	13.7	X	3415	10.5	X
3416	14.1	X	3417	13.6	X	3418	11.4	X	3419	10.5	X	3420	11.7	X
3421	13.6	X	3422	12.6	X	3423	12.2	X	3424	12.6	X	3425	10.8	X

3426	12.7	X	3427	13.5	X	3428	12.0	X	3429	13.8	X	3430	12.4	X
3431	10.0	X	3432	11.5	X	3433	13.2	X	3434	13.1	X	3435	13.0	X
3436	12.1	X	3437	13.3	X	3438	11.5	X	3439	12.5	X	3440	12.2	X
3441	12.2	X	3442	11.6	X	3443	13.3	X	3444	12.4	X	3445	12.1	X
3446	13.4	X	3447	13.2	X	3448	13.1	X	3449	12.4	X	3450	12.6	X
3451	7.8	X	3452	13.2	X	3453	11.7	X	3454	13.7	X	3455	12.9	X
3456	13.7	X	3457	11.8	X	3458	12.8	X	3459	12.9	X	3460	12.1	X
3461	13.5	X	3462	13.3	X	3463	13.2	X	3464	13.5	X	3465	13.4	X
3466	13.2	X	3467	13.0	X	3468	11.7	X	3469	11.1	X	3470	13.2	X
3471	11.3	X	3472	13.5	X	3473	13.7	X	3474	12.8	X	3475	10.7	X
3476	11.9	X	3477	13.5	X	3478	12.8	X	3479	11.5	X	3480	13.1	X
3481	13.4	X	3482	12.1	X	3483	13.7	X	3484	12.4	X	3485	12.9	X
3486	13.5	X	3487	12.8	X	3488	12.9	X	3489	13.3	X	3490	13.3	X
3491	12.3	X	3492	11.5	X	3493	13.3	X	3494	12.9	X	3495	11.5	X
3496	14.9	X	3497	12.1	X	3498	13.4	X	3499	12.4	X	3500	12.8	X
3501	11.6	X	3502	11.8	X	3503	13.5	X	3504	11.8	X	3505	11.8	X
3506	11.4	X	3507	11.3	X	3508	12.5	X	3509	12.8	X	3510	12.5	X
3511	12.3	X	3512	13.6	X	3513	12.9	X	3514	11.7	X	3515	12.1	X
3516	12.1	X	3517	14.0	X	3518	12.2	X	3519	13.1	X	3520	13.6	X
3521	14.3	X	3522	12.2	X	3523	12.4	X	3524	13.3	X	3525	12.0	X
3526	12.1	X	3527	13.0	X	3528	12.9	X	3529	14.0	X	3530	13.8	X
3531	12.9	X	3532	12.0	X	3533	12.6	X	3534	12.4	X	3535	13.9	X
3536	13.8	X	3537	13.2	X	3538	13.4	X	3539	13.1	X	3540	9.0	X
3541	12.6	X	3542	11.9	X	3543	11.4	X	3544	12.4	X	3545	12.0	X
3546	12.3	X	3547	13.3	X	3548	9.4	X	3549	12.8	X	3550	11.8	X
3551	16.75	X	3552	13.0	X	3553	16.6	X	3554	15.82	X	3555	12.6	X
3556	12.4	X	3557	10.7	X	3558	12.4	X	3559	13.8	X	3560	10.5	X
3561	10.7	X	3562	13.1	X	3563	11.3	X	3564	9.0	X	3565	11.3	X
3566	12.5	X	3567	12.5	X	3568	12.2	X	3569	12.8	X	3570	11.4	X
3571	11.1	X	3572	12.8	X	3573	12.6	X	3574	13.9	X	3575	11.7	X
3576	13.1	X	3577	10.8	X	3578	8.1	X	3579	14.7	X	3580	12.6	X
3581	11.9	X	3582	11.3	X	3583	13.3	X	3584	12.0	X	3585	12.4	X
3586	13.1	X	3587	12.3	X	3588	12.0	X	3589	13.7	X	3590	13.3	X
3591	11.5	X	3592	13.6	X	3593	14.4	X	3594	12.7	X	3595	12.8	X
3596	9.4	X	3597	11.5	X	3598	11.8	X	3599	12.0	X	3600	12.9	X
3601	12.4	X	3602	14.3	X	3603	12.8	X	3604	13.0	X	3605	13	X
3606	12.3	X	3607	14.8	X	3608	10.9	X	3609	11.9	X	3610	14.5	X
3611	12.7	X	3612	13.5	X	3613	12.6	X	3614	10.7	X	3615	11.1	X
3616	12.1	X	3617	12.0	X	3618	12.5	X	3619	13.9	X	3620	12.1	X
3621	12.2	X	3622	11.3	X	3623	12.2	X	3624	13.7	X	3625	11.4	X
3626	12.1	X	3627	13.4	X	3628	12.6	X	3629	12.6	X	3630	12.8	X
3631	10.4	X	3632	12.5	X	3633	12.5	X	3634	13.9	X	3635	14.5	X
3636	13.9	X	3637	12.2	X	3638	11.4	X	3639	13.7	X	3640	12.8	X
3641	11.7	X	3642	11.2	X	3643	13.2	X	3644	13.2	X	3645	12.0	X
3646	12.9	X	3647	11.5	X	3648	13.0	X	3649	11.7	X	3650	12.0	X
3651	13.6	X	3652	12.7	X	3653	13.4	X	3654	14.3	X	3655	11.0	X
3656	13.9	X	3657	12.6	X	3658	13.8	X	3659	13.6	X	3660	11.3	X
3661	12.0	X	3662	12.0	X	3663	12.4	X	3664	12.4	X	3665	12.4	X
3666	11.9	X	3667	11.9	X	3668	13.4	X	3669	13.3	X	3670	12.0	X
3671	16.3	X	3672	13.4	X	3673	13.0	X	3674	11.7	X	3675	11.1	X
3676	14.0	X	3677	14.0	X	3678	13	X	3679	13.7	X	3680	12.9	X
3681	13.5	X	3682	11.5	X	3683	11.01	X	3684	13.4	X	3685	13.4	X
3686	12.0	X	3687	11.7	X	3688	14.9	X	3689	12.2	X	3690	13.9	X
3691	14.5	X	3692	13.3	X	3693	11.7	X	3694	10.5	X	3695	14.1	X
3696	12.5	X	3697	13.6	X	3698	13.3	X	3699	12.9	X	3700	12.6	X
3701	12.3	X	3702	11.6	X	3703	14.4	X	3704	12.5	X	3705	12.6	X
3706	13.8	X	3707	13.4	X	3708	9.2	X	3709	9.1	X	3710	12.7	X
3711	12.6	X	3712	11.8	X	3713	11.3	X	3714	12.9	X	3715	13.5	X
3716	13.8	X	3717	11.9	X	3718	12.7	X	3719	13.4	X	3720	13.0	X

3721	11.7	X	3722	12.9	X	3723	13.6	X	3724	11.5	X	3725	13.8	X
3726	11.9	X	3727	11.3	X	3728	11.6	X	3729	11.9	X	3730	12.0	X
3731	10.3	X	3732	14.6	X	3733	12.8	X	3734	12.6	X	3735	11.5	X
3736	11.1	X	3737	12.71	X	3738	12.8	X	3739	13.4	X	3740	14.0	X
3741	13.3	X	3742	13.2	X	3743	13.9	X	3744	12.7	X	3745	14.2	X
3746	12.4	X	3747	11.1	X	3748	12.8	X	3749	13.7	X	3750	11.8	X
3751	11.8	X	3752	15.5	X	3753	14.4	X	3754	10.1	X	3755	13.9	X
3756	13.8	X	3757	18.95	X	3758	12.7	X	3759	11.9	X	3760	12.5	X
3761	11.2	X	3762	13.4	X	3763	12.7	X	3764	13.3	X	3765	12.5	X
3766	11.7	X	3767	11.5	X	3768	11.1	X	3769	13.7	X	3770	14.5	X
3771	14.1	X	3772	11.2	X	3773	13.2	X	3774	11.3	X	3775	12.3	X
3776	10.2	X	3777	13.5	X	3778	12.5	X	3779	11.5	X	3780	12.1	X
3781	12.1	X	3782	12.5	X	3783	13.0	X	3784	11.0	X	3785	12.1	X
3786	11.3	X	3787	11.7	X	3788	11.7	X	3789	12.8	X	3790	12.4	X
3791	12.4	X	3792	13.3	X	3793	8.5	X	3794	9.6	X	3795	13.2	X
3796	11.8	X	3797	12.11	X	3798	13.7	X	3799	11.7	X	3800	15.4	X
3801	11.3	X	3802	13.6	X	3803	11.2	X	3804	12.6	X	3805	12.4	X
3806	14.7	X	3807	13.4	X	3808	14.9	X	3809	12.6	X	3810	13.2	X
3811	11.7	X	3812	12.1	X	3813	13.2	X	3814	12.4	X	3815	12.2	X
3816	12.0	X	3817	14.5	X	3818	14.3	X	3819	12.3	X	3820	12.1	X
3821	12.0	X	3822	13.4	X	3823	12.5	X	3824	13.0	X	3825	13.0	X
3826	13.7	X	3827	12.2	X	3828	11.4	X	3829	12.2	X	3830	11.5	X
3831	13.4	X	3832	12.4	X	3833	15.5	X	3834	13.3	X	3835	12.1	X
3836	13.8	X	3837	12.9	X	3838	15.4	X	3839	12.9	X	3840	13.2	X
3841	13.1	X	3842	13.1	X	3843	10.6	X	3844	11.7	X	3845	11.7	X
3846	12.1	X	3847	11.3	X	3848	13.3	X	3849	13.0	X	3850	13.5	X
3851	13.9	X	3852	12.1	X	3853	12.5	X	3854	14.7	X	3855	13.1	X
3856	12.0	X	3857	13.4	X	3858	13.6	X	3859	12.0	X	3860	11.9	X
3861	12.1	X	3862	13.1	X	3863	13.1	X	3864	13.4	X	3865	12.6	X
3866	12.0	X	3867	12.9	X	3868	13.1	X	3869	13.0	X	3870	12.3	X
3871	12.3	X	3872	12.8	X	3873	11.8	X	3874	12.2	X	3875	12.9	X
3876	11.5	X	3877	12.1	X	3878	12.8	X	3879	13.5	X	3880	13.8	X
3881	12.8	X	3882	12.6	X	3883	11.7	X	3884	12.6	X	3885	12.1	X
3886	12.4	X	3887	12.2	X	3888	12.8	X	3889	12.8	X	3890	13.3	X
3891	14.9	X	3892	12.9	X	3893	13.2	X	3894	11.7	X	3895	12.5	X
3896	11.5	X	3897	12.8	X	3898	12.4	X	3899	11.3	X	3900	13.6	X
3901	12.4	X	3902	11.4	X	3903	12.1	X	3904	11.1	X	3905	12.7	X
3906	10.9	X	3907	11.7	X	3908	17.4	X	3909	12.0	X	3910	12.4	X
3911	11.4	X	3912	13.4	X	3913	12.0	X	3914	11.7	X	3915	12.2	X
3916	12.1	X	3917	13.9	X	3918	13.6	X	3919	14.1	X	3920	13.3	X
3921	12.6	X	3922	12.6	X	3923	11.3	X	3924	12.3	X	3925	10.8	X
3926	14.2	X	3927	14.1	X	3928	13.4	X	3929	13.5	X	3930	12.1	X
3931	13.5	X	3932	12.0	X	3933	12.5	X	3934	13.1	X	3935	12.1	X
3936	13.1	X	3937	11.8	X	3938	13	X	3939	11.4	X	3940	12.7	X
3941	12.9	X	3942	13.1	X	3943	14.2	X	3944	13.1	X	3945	12.1	X
3946	12.1	X	3947	11.9	X	3948	13.7	X	3949	13.2	X	3950	12.0	X
3951	12.9	X	3952	14.1	X	3953	13.6	X	3954	15.0	X	3955	11.3	X
3956	13.4	X	3957	12.4	X	3958	12.1	X	3959	14.0	X	3960	12.0	X
3961	12.1	X	3962	12.0	X	3963	13.6	X	3964	13.1	X	3965	12.3	X
3966	12.1	X	3967	11.2	X	3968	12.6	X	3969	14.2	X	3970	12.4	X
3971	11.8	X	3972	14.6	X	3973	13.1	X	3974	11.6	X	3975	12.3	X
3976	11.5	X	3977	12.3	X	3978	11.7	X	3979	11.7	X	3980	12.7	X
3981	11.9	X	3982	12.9	X	3983	12.3	X	3984	13.9	X	3985	11.4	X
3986	12.8	X	3987	12.2	X	3988	18.3	X	3989	14.0	X	3990	10.4	X
3991	13.2	X	3992	11.8	X	3993	12.4	X	3994	12.6	X	3995	12.2	X
3996	12.8	X	3997	13.3	X	3998	12.8	X	3999	12.4	X	4000	12.3	X
4001	13.8	X	4002	11.9	X	4003	10.8	X	4004	11.7	X	4005	12.5	X
4006	12.6	X	4007	10.1	X	4008	13.1	X	4009	12.2	X	4010	12.9	X
4011	13.8	X	4012	13.4	X	4013	11.8	X	4014	11.9	X	4015	15.99	X

4016	14.1	X	4017	13.1	X	4018	13.5	X	4019	15.2	X	4020	13.0	X
4021	13.9	X	4022	12.8	X	4023	13.5	X	4024	12.8	X	4025	14.0	X
4026	13.3	X	4027	13.5	X	4028	12.9	X	4029	13.0	X	4030	13.0	X
4031	13.3	X	4032	14.4	X	4033	13.8	X	4034	18.1	X	4035	9.1	X
4036	12.6	X	4037	12.5	X	4038	13.5	X	4039	12.8	X	4040	12.8	X
4041	11.3	X	4042	13.6	X	4043	12.3	X	4044	11.9	X	4045	11.2	X
4046	12.1	X	4047	13.0	X	4048	14.6	X	4049	11.9	X	4050	12.4	X
4051	12.3	X	4052	12.2	X	4053	13.2	X	4054	12.6	X	4055	14.8	X
4056	12.4	X	4057	9.5	X	4058	11.3	X	4059	11.7	X	4060	9.2	X
4061	11.8	X	4062	13.8	X	4063	9.0	X	4064	13.2	X	4065	14.2	X
4066	13.1	X	4067	12.8	X	4068	9.5	X	4069	14.0	X	4070	13.3	X
4071	12.1	X	4072	13.3	X	4073	11.8	X	4074	11.8	X	4075	12.3	X
4076	11.9	X	4077	11.3	X	4078	11.2	X	4079	12.1	X	4080	13.3	X
4081	12.8	X	4082	12.8	X	4083	13.0	X	4084	11.7	X	4085	12.0	X
4086	9.1	X	4087	13.2	X	4088	12.7	X	4089	13.0	X	4090	13.5	X
4091	10.9	X	4092	13.2	X	4093	11.9	X	4094	13.2	X	4095	14.2	X
4096	11.8	X	4097	13.4	X	4098	13.4	X	4099	12.1	X	4100	11.0	X
4101	12.5	X	4102	11.5	X	4103	11.3	X	4104	12.6	X	4105	12.2	X
4106	11.8	X	4107	11.7	X	4108	13.3	X	4109	13.4	X	4110	11.6	X
4111	14.9	X	4112	11.2	X	4113	13.6	X	4114	13.7	X	4115	11.7	X
4116	13.0	X	4117	12.6	X	4118	11.8	X	4119	12.2	X	4120	12.2	X
4121	12.6	X	4122	12.2	X	4123	12.8	X	4124	12.6	X	4125	13.5	X
4126	11.6	X	4127	11.6	X	4128	13.8	X	4129	13.3	X	4130	12.4	X
4131	11.3	X	4132	11.8	X	4133	11.9	X	4134	13.7	X	4135	12.0	X
4136	13.6	X	4137	12.9	X	4138	9.8	X	4139	11.9	X	4140	11.2	X
4141	12.6	X	4142	13.8	X	4143	12.1	X	4144	11.5	X	4145	13.6	X
4146	13.7	X	4147	13.0	X	4148	12.9	X	4149	12.4	X	4150	12.9	X
4151	11.9	X	4152	12.1	X	4153	12.4	X	4154	13.2	X	4155	12.3	X
4156	12.0	X	4157	11.9	X	4158	11.3	X	4159	10.8	X	4160	13.1	X
4161	12.9	X	4162	11.6	X	4163	10.9	X	4164	12.3	X	4165	13.3	X
4166	12.5	X	4167	12.0	X	4168	13.9	X	4169	10.9	X	4170	11.5	X
4171	13.6	X	4172	14.5	X	4173	13.0	X	4174	11.6	X	4175	12.4	X
4176	11.7	X	4177	12.8	X	4178	12.4	X	4179	14.0	X	4180	12.7	X
4181	12.0	X	4182	12.2	X	4183	14.5	X	4184	12.9	X	4185	13.2	X
4186	11.5	X	4187	12.3	X	4188	12.6	X	4189	13.4	X	4190	12.8	X
4191	12.4	X	4192	11.5	X	4193	12.2	X	4194	12.1	X	4195	12.3	X
4196	10.7	X	4197	14.5	X	4198	12.8	X	4199	13.0	X	4200	13.5	X
4201	11.0	X	4202	11.0	X	4203	12.1	X	4204	13.0	X	4205	14.7	X
4206	11.9	X	4207	11.3	X	4208	11.5	X	4209	10.8	X	4210	11.9	X
4211	11.9	X	4212	11.5	X	4213	13.4	X	4214	12.7	X	4215	11.7	X
4216	14.2	X	4217	12.5	X	4218	14.3	X	4219	12.9	X	4220	13.0	X
4221	12.7	X	4222	12.2	X	4223	11.6	X	4224	11.0	X	4225	13.2	X
4226	11.6	X	4227	13.5	X	4228	13.8	X	4229	12.8	X	4230	11.9	X
4231	13.1	X	4232	13.3	X	4233	13.8	X	4234	12.4	X	4235	12.3	X
4236	11.3	X	4237	13.0	X	4238	13.6	X	4239	14.2	X	4240	13.2	X
4241	15.2	X	4242	12.8	X	4243	12.5	X	4244	12.2	X	4245	13.7	X
4246	13.6	X	4247	13.0	X	4248	14.2	X	4249	11.9	X	4250	11.9	X
4251	13.9	X	4252	12.8	X	4253	12.9	X	4254	12.0	X	4255	13.5	X
4256	13.5	X	4257	15.8	X	4258	11.7	X	4259	12.6	X	4260	11.9	X
4261	12.4	X	4262	13.0	X	4263	12.4	X	4264	13.4	X	4265	12.8	X
4266	11.9	X	4267	14.0	X	4268	13.4	X	4269	13.8	X	4270	13.5	X
4271	11.9	X	4272	13.4	X	4273	14.5	X	4274	12.6	X	4275	14.4	X
4276	14.3	X	4277	12.8	X	4278	13.8	X	4279	14.4	X	4280	13.2	X
4281	13.4	X	4282	13.0	X	4283	12.7	X	4284	12.0	X	4285	12.3	X
4286	11.5	X	4287	13.0	X	4288	11.8	X	4289	12.4	X	4290	11.6	X
4291	11.5	X	4292	11.9	X	4293	12.0	X	4294	12.8	X	4295	13.5	X
4296	13.3	X	4297	12.6	X	4298	12.2	X	4299	13.3	X	4300	13.3	X
4301	12.3	X	4302	12.5	X	4303	14.1	X	4304	13.7	X	4305	12.0	X
4306	12.2	X	4307	13.0	X	4308	12.3	X	4309	13.0	X	4310	13.6	X

4311	13.6	X	4312	13.1	X	4313	12.8	X	4314	13.2	X	4315	12.4	X
4316	12.1	X	4317	10.3	X	4318	11.6	X	4319	13.7	X	4320	15.6	X
4321	13.0	X	4322	14.3	X	4323	13.6	X	4324	12.2	X	4325	12.5	X
4326	12.5	X	4327	12.7	X	4328	14.0	X	4329	13.6	X	4330	13.6	X
4331	13.7	X	4332	11.9	X	4333	13.9	X	4334	12.8	X	4335	13.5	X
4336	13.5	X	4337	11.9	X	4338	13.8	X	4339	13.7	X	4340	13.4	X
4341	15.6	X	4342	12.3	X	4343	11.8	X	4344	12.5	X	4345	12.4	X
4346	12.2	X	4347	11.9	X	4348	9.1	X	4349	11.8	X	4350	12.0	X
4351	12.6	X	4352	11.0	X	4353	12.1	X	4354	13.3	X	4355	12.7	X
4356	13.1	X	4357	11.6	X	4358	12.2	X	4359	13.5	X	4360	12.8	X
4361	12.3	X	4362	12.6	X	4363	13.2	X	4364	14.2	X	4365	12.6	X
4366	12.2	X	4367	12.2	X	4368	11.4	X	4369	11.7	X	4370	14.6	X
4371	13.3	X	4372	12.9	X	4373	13.8	X	4374	12.9	X	4375	12.6	X
4376	13.5	X	4377	13.2	X	4378	10.8	X	4379	11.8	X	4380	11.8	X
4381	11.4	X	4382	12.2	X	4383	13.0	X	4384	12.1	X	4385	12.0	X
4386	12.8	X	4387	13.0	X	4388	13.4	X	4389	12.2	X	4390	13.4	X
4391	13.5	X	4392	14.0	X	4393	12.5	X	4394	15.3	X	4395	12.3	X
4396	13.7	X	4397	13.8	X	4398	12.9	X	4399	12.4	X	4400	13.8	X
4401	15.9	X	4402	11.7	X	4403	13.7	X	4404	12.8	X	4405	10.7	X
4406	13.2	X	4407	12.0	X	4408	12.8	X	4409	12.4	X	4410	11.5	X
4411	13.8	X	4412	12.7	X	4413	13.6	X	4414	14.0	X	4415	15.1	X
4416	15.2	X	4417	11.5	X	4418	12.5	X	4419	13.0	X	4420	12.1	X
4421	12.71	X	4422	12.9	X	4423	11.2	X	4424	11.5	X	4425	13.9	X
4426	12.3	X	4427	11.9	X	4428	13.0	X	4429	14.5	X	4430	12.4	X
4431	11.2	X	4432	14.8	X	4433	12.9	X	4434	13.2	X	4435	13.2	X
4436	11.1	X	4437	12.6	X	4438	11.4	X	4439	13.2	X	4440	12.5	X
4441	13.2	X	4442	12.4	X	4443	13.4	X	4444	13.0	X	4445	14.0	X
4446	11.1	X	4447	12.7	X	4448	11.9	X	4449	11.2	X	4450	17.1	X
4451	12.5	X	4452	11.9	X	4453	11.5	X	4454	12.0	X	4455	11.0	X
4456	13.5	X	4457	12.2	X	4458	13.5	X	4459	13.3	X	4460	10.8	X
4461	11.7	X	4462	11.8	X	4463	12.6	X	4464	14.0	X	4465	13.4	X
4466	12.0	X	4467	11.8	X	4468	14.2	X	4469	13.8	X	4470	12.0	X
4471	12.4	X	4472	13.7	X	4473	12.8	X	4474	12.7	X	4475	13.6	X
4476	13.8	X	4477	14.1	X	4478	14.1	X	4479	12.1	X	4480	13.7	X
4481	14.2	X	4482	12.9	X	4483	11.9	X	4484	12.2	X	4485	11.8	X
4486	15.4	X	4487	17.6	X	4488	13.9	X	4489	9.0	X	4490	12.7	X
4491	12.8	X	4492	12.9	X	4493	11.0	X	4494	12.6	X	4495	11.3	X
4496	12.7	X	4497	11.5	X	4498	11.3	X	4499	12.2	X	4500	12.0	X
4501	10.5	X	4502	11.6	X	4503	15.9	X	4504	13.1	X	4505	11.3	X
4506	12.2	X	4507	11.6	X	4508	13.0	X	4509	12.0	X	4510	13.0	X
4511	12.1	X	4512	11.7	X	4513	11.6	X	4514	13.4	X	4515	13.2	X
4516	12.4	X	4517	13.4	X	4518	13.7	X	4519	13.3	X	4520	12.8	X
4521	11.4	X	4522	11.6	X	4523	12.2	X	4524	13.1	X	4525	12.7	X
4526	12.5	X	4527	14.0	X	4528	12.3	X	4529	11.6	X	4530	11.8	X
4531	14.9	X	4532	11.9	X	4533	12.8	X	4534	12.2	X	4535	12.5	X
4536	13.4	X	4537	11.2	X	4538	13.3	X	4539	12.3	X	4540	11.9	X
4541	12.5	X	4542	11.1	X	4543	9.8	X	4544	17.1	X	4545	11.5	X
4546	13.7	X	4547	11.2	X	4548	13.6	X	4549	13.9	X	4550	12.7	X
4551	14.0	X	4552	13.7	X	4553	12.7	X	4554	11.3	X	4555	13.7	X
4556	13.2	X	4557	11.1	X	4558	12.2	X	4559	12.2	X	4560	11.9	X
4561	13.3	X	4562	13.0	X	4563	13.4	X	4564	13.3	X	4565	13.1	X
4566	12.1	X	4567	13.2	X	4568	11.7	X	4569	11.6	X	4570	13.3	X
4571	11.8	X	4572	12.8	X	4573	11.6	X	4574	11.2	X	4575	11.2	X
4576	11.3	X	4577	12.2	X	4578	13.4	X	4579	13.7	X	4580	11.7	X
4581	20.5	X	4582	13.0	X	4583	13.0	X	4584	12.7	X	4585	13.1	X
4586	13.7	X	4587	15.4	X	4588	12.1	X	4589	13.5	X	4590	13.4	X
4591	13.8	X	4592	12.1	X	4593	11.4	X	4594	14.2	X	4595	13.0	X
4596	16.0	X	4597	12.1	X	4598	12.1	X	4599	12.6	X	4600	11.6	X
4601	12.5	X	4602	12.4	X	4603	11.9	X	4604	14.0	X	4605	13.3	X

4606	12.7	X	4607	12.2	X	4608	12.8	X	4609	11.5	X	4610	13.0	X
4611	12.1	X	4612	12.3	X	4613	11.8	X	4614	12.9	X	4615	12.4	X
4616	12.3	X	4617	11.2	X	4618	12.8	X	4619	12.4	X	4620	13.5	X
4621	13.4	X	4622	12.2	X	4623	12.9	X	4624	12.5	X	4625	13.4	X
4626	12.7	X	4627	12.1	X	4628	11.0	X	4629	12.8	X	4630	13.4	X
4631	12.9	X	4632	13.6	X	4633	12.6	X	4634	13.1	X	4635	12.5	X
4636	12.7	X	4637	13.0	X	4638	13.5	X	4639	13.0	X	4640	13.2	X
4641	13.7	X	4642	11.9	X	4643	13.5	X	4644	12.3	X	4645	12.4	X
4646	14.0	X												

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ROMAN NUMERAL DESIGNATIONS OF COMETS IN 1989.

The following tabulation continues that on MPC 15439.

Comet	T	Name	Year/letter	Ref.
1989 I	Jan. 4.4	P/Tempel 1	1987e1	IAUC 4498
1989 II	Feb. 4.1	P/d'Arrest	1987k	IAUC 4365
1989 III	Feb. 26.1	Shoemaker	1989e	MPC 16204
1989 IV	June 2.6	(SMM 8)	1989m	IAUC 4793
1989 V	June 12.5	Shoemaker-Holt-Rodriquez	1988h	MPC 14904
1989 VI	June 18.4	P/Churyumov-Gerasimenko	1988i	IAUC 4625
1989 VII	July 8.8	(SMM 9)	1989q	IAUC 4815
1989 VIII	Aug. 19.9	P/Pons-Winnecke	1989g	IAUC 4736
1989 IX	Aug. 20.3	Helin-Roman	1989s	MPC 16001
1989 X	Sept. 11.9	P/Brorsen-Metcalf	1989o	MPC 14747
1989 XI	Sept. 25.0	P/Gunn		MPC 11502
1989 XII	Sept. 28.9	(SMM 10)	1989x	IAUC 4884
1989 XIII	Oct. 10.5	P/Lovas 1	1989p	IAUC 4813
1989 XIV	Oct. 18.5	P/du Toit-Neujmin-Delporte	1989l	IAUC 4787
1989 XV	Oct. 26.7	P/Schwassmann-Wachmann 1		MPC 11510
1989 XVI	Nov. 1.1	P/Helin-Roman-Alu 2	1989y	MPC 15857
1989 XVII	Nov. 3.1	P/Gehrels 2	1989n	IAUC 4800
1989 XVIII	Nov. 7.6	McKenzie-Russell	1989f1	MPC 16204
1989 XIX	Nov. 11.9	Okazaki-Levy-Rudenko	1989r	MPC 16378
1989 XX	Nov. 28.4	P/Clark	1989h	IAUC 4742
1989 XXI	Dec. 15.9	Helin-Roman-Alu	1989v	MPC 15857
1989 XXII	Dec. 27.9	Aarseth-Brewington	1989a1	MPC 17174

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OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

- 046 Klet. Observer A. Mrkos.
 047 Poznan. Observers S. Breiter, M. Gromadzinski, W. Naskrecki, R. Ochnik, G. Rewers, J. Kosicka, A. Kryszczyńska and H. Kuzminski.
 061 Uzhgorod. 0.42-m astrograph. Observers I. I. Goroshchak, T. Yu. Galas, M. M. Osipenko and E. I. Skrip. From Kiev Komet. Tsirk.
 095 Crimean Astrophysical Observatory. Observers N. S. Chernykh, L. I. Chernykh and V. V. Rumyantsev.
 114 Engelhardt Observatory, Zelenchukskaya Station. 0.40-m astrograph. Observers V. N. Kitkin and S. K. Fomin. From Kiev Komet. Tsirk.
 168 Kourovskaya. Observers G. P. Khremli, S. V. Sukmanova, V. I. Kolesnikov, T. Yu. Kuz'minykh, M. V. Shipov and S. M. Timirshin. From Kiev Komet. Tsirk.

- 186 Kitab. 0.4-m astrograph. Observers E. R. Mirmakhmudov, Kh. Kh. Rakhmatov, N. T. Kadyrova and G. M. Khusainova. From Kiev Komet. Tsirk.
- 188 Majdanak Mountain Station, Sternberg Astronomical Institute. 0.23-m f/10 astrograph. Observers V. L. Korneev and S. V. Zhuiko. Reductions by N. M. Evstigneeva.
- 192 Tashkent. 0.33-m astrograph. Observer M. R. Eshmatov. Reductions by L. I. Bashtova. From Kiev Komet. Tsirk.
- 210 Alma Ata. 0.50-m telescope. D. A. Rozhkovskij, I. B. L'vova and S. G. Moshkina. From Kiev Komet. Tsirk.
- 372 Geisei. 0.60-m reflector. Observer T. Seki.
- 373 Oishi. 0.31-m f/4.2 reflector. Observer M. Tsumura. Measured by S. Hayakawa.
- 402 Dynic Astronomical Observatory. 0.25-m f/3.4 Schmidt. Observer A. Sugie.
- 413 Siding Spring. Uppsala Southern Schmidt. Observer R. H. McNaught.
- 479 Sollies-Pont. Observer B. Candela.
- 494 Stakenbridge. Observer B. Manning.
- 503 Cambridge. Observer J. D. Shanklin.
- 553 Chorzow. Observers I. Wlodarczyk, M. Szczepanski, T. Firszt, M. Greupner, J. Kuczynski and B. Osiejuk.
- 586 Pic du Midi. 2-m reflector. Observers H. Rickman and G. Tancredi.
- 657 Victoria. Observers J. Tatum and D. Balam.
- 675 Palomar. 0.46-m Schmidt. Observers E. Helin, K. Lawrence, D. H. Levy, B. Roman, C. S. Shoemaker and E. M. Shoemaker.
- 691 Kitt Peak. Spacewatch telescope. Observer J. V. Scotti.
- 801 Oak Ridge Observatory. 1.5-m reflector + CCD. Observers R. E. McCrosky and C.-Y. Shao.
- 809 European Southern Observatory. GPO astrograph. Observer H. Dehehogne.
- 897 Chiyoda. Observers T. Kojima and T. Ohtsuka. Measured by T. Kojima.
- 984 Eastfield. Observer H. B. Ridley. Communicated by G. M. Hurst.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
Periodic Comet Encke						
/1987 XIII	1990	09 26.14666	09 02 56.97	+29 32 33.6		503
Comet Bradfield (1987 XXIX)						
/1987 XXIX	1987	12 23.58133	22 28 29.25	+24 51 36.4		192
/1987 XXIX	1987	12 23.59535	22 28 35.63	+24 51 47.7		192
/1987 XXIX	1987	12 23.59882	22 28 36.98	+24 51 50.8		192
/1987 XXIX	1987	12 23.60159	22 28 38.20	+24 51 53.1		192
/1987 XXIX	1987	12 23.60436	22 28 39.56	+24 51 56.6		192
/1987 XXIX	1987	12 23.61509	22 28 44.68	+24 52 04.5		192
/1987 XXIX	1987	12 23.61752	22 28 45.41	+24 52 05.4		192
/1987 XXIX	1987	12 23.62028	22 28 46.57	+24 52 14.6		192
/1987 XXIX	1987	12 23.62342	22 28 47.73	+24 52 13.2		192
/1987 XXIX	1988	01 18.67720	01 07 09.12	+25 35 33.0		114
/1987 XXIX	1988	01 18.68075	01 07 10.12	+25 35 32.3		114
/1987 XXIX	1988	01 19.68584	01 11 48.88	+25 30 40.2		114
/1987 XXIX	1988	01 23.67347	01 29 19.00	+25 10 16.1		114
/1987 XXIX	1988	01 24.68018	01 33 30.46	+25 04 58.0		114
/1987 XXIX	1988	02 05.71430	02 17 36.69	+24 02 20.6		114
/1987 XXIX	1988	02 08.70772	02 27 08.82	+23 47 56.0		114
/1987 XXIX	1988	02 10.69988	02 33 13.76	+23 38 42.6		114
Comet Liller (1988 V)						
/1988 V	1988	04 20.65398	01 33 51.52	+55 03 08.1		192
/1988 V	1988	04 20.65565	01 33 52.09	+55 03 16.1		192
/1988 V	1988	04 21.64821	01 37 55.14	+56 11 31.9		192

/1988 V	1988 04 21.64994	01 37 55.65	+56 11 37.4	192
/1988 V	1988 04 21.65167	01 37 55.97	+56 11 46.3	192
Periodic Comet Brorsen-Metcalf				
/1989 X	1989 08 27.96793	08 22 35.71	+33 20 01.2	186
/1989 X	1989 08 27.97139	08 22 37.36	+33 19 51.7	186
/1989 X	1989 08 27.97382	08 22 38.60	+33 19 44.4	186
/1989 X	1989 08 28.97352	08 30 22.07	+32 26 30.0	186
/1989 X	1989 08 28.97550	08 30 22.90	+32 26 24.2	186
/1989 X	1989 08 29.97009	08 37 46.16	+31 32 34.3	186
/1989 X	1989 08 29.97286	08 37 47.19	+31 32 26.1	186
/1989 X	1989 08 29.97597	08 37 48.43	+31 32 16.6	186
/1989 X	1989 08 29.98890	08 37 54.54	+31 31 34.8	186
/1989 X	1989 08 31.97875	08 51 53.40	+29 41 39.2	186
/1989 X	1989 08 31.99087	08 51 57.86	+29 40 54.7	186
/1989 X	1989 08 31.99227	08 51 58.41	+29 40 51.9	186
/1989 X	1989 08 31.99381	08 51 59.09	+29 40 47.3	186
/1989 X	1989 09 03.98484	09 11 18.31	+26 51 20.3	186
/1989 X	1989 09 03.98622	09 11 18.82	+26 51 15.0	186
/1989 X	1989 09 03.98761	09 11 19.38	+26 51 11.9	186
/1989 X	1989 09 03.99349	09 11 23.76	+26 50 52.4	186
Periodic Comet Russell 3				
/1989d	1990 05 26.61713	16 04 04.65	-22 33 28.4	16 T 897
/1989d	1990 05 26.64456	16 04 03.51	-22 33 13.3	897
Periodic Comet Kearns-Kwee				
/1989u	1990 09 19.37561	06 02 15.99	+32 33 48.8	801
/1989u	1990 10 15.39006	06 44 26.43	+32 54 34.1	801
/1989u	1990 10 15.40351	06 44 27.46	+32 54 34.2	801
/1989u	1990 10 17.35593	06 47 06.62	+32 54 52.0	801
/1989u	1990 10 17.36863	06 47 07.62	+32 54 52.2	801
/1989u	1990 10 20.41699	06 51 05.04	+32 55 09.1	801
Comet Austin (1989c1)				
/1989c1	1990 04 17.94516	01 10 47.14	+33 29 52.7	168
/1989c1	1990 04 18.94494	01 06 20.95	+34 01 53.7	168
/1989c1	1990 04 18.94958	01 06 19.68	+34 02 03.4	168
/1989c1	1990 04 18.95403	01 06 18.66	+34 02 07.2	168
/1989c1	1990 04 18.95762	01 06 17.25	+34 02 21.6	168
/1989c1	1990 04 19.92664	01 01 52.72	+34 29 01.9	168
/1989c1	1990 04 19.93854	01 01 49.60	+34 29 21.9	168
/1989c1	1990 04 19.94526	01 01 47.87	+34 29 29.3	168
/1989c1	1990 04 19.94948	01 01 46.55	+34 29 38.6	168
/1989c1	1990 04 19.95504	01 01 45.16	+34 29 43.1	168
/1989c1	1990 04 20.92014	00 57 15.34	+34 52 28.9	168
/1989c1	1990 04 20.92986	00 57 12.55	+34 52 36.8	168
/1989c1	1990 04 20.93831	00 57 10.29	+34 52 46.4	168
/1989c1	1990 04 20.93906	00 57 10.15	+34 52 46.8	168
/1989c1	1990 04 20.94062	00 57 09.64	+34 52 50.1	168
/1989c1	1990 04 20.94352	00 57 08.88	+34 52 56.6	168
/1989c1	1990 04 20.95208	00 57 06.13	+34 53 06.0	168
/1989c1	1990 04 21.93557	00 52 26.82	+35 12 09.8	168
/1989c1	1990 04 21.93837	00 52 26.10	+35 12 21.3	168
/1989c1	1990 04 22.93854	00 47 36.24	+35 28 01.5	168
/1989c1	1990 04 22.94227	00 47 35.53	+35 28 07.9	168
/1989c1	1990 05 05.04454	23 41 06.51	+34 41 09.0	061
/1989c1	1990 05 05.04574	23 41 06.14	+34 41 07.2	061
/1989c1	1990 05 05.04639	23 41 06.05	+34 41 06.0	061

/1989c1	1990 05 05.04782	23 41 05.62	+34 41 05.1	061
/1989c1	1990 05 05.05183	23 41 03.83	+34 40 59.3	061
/1989c1	1990 05 05.05234	23 41 03.57	+34 40 59.0	061
/1989c1	1990 05 05.86644	23 35 40.72	+34 22 17.3	168
/1989c1	1990 05 05.86901	23 35 39.49	+34 22 11.4	168
/1989c1	1990 05 05.87500	23 35 37.12	+34 22 05.7	168
/1989c1	1990 05 05.87708	23 35 36.28	+34 22 02.9	168
/1989c1	1990 05 17.04948	21 53 40.86	+24 00 22.3	061
/1989c1	1990 05 17.05069	21 53 39.86	+24 00 11.3	061
/1989c1	1990 05 17.05174	21 53 38.74	+24 00 09.6	061
/1989c1	1990 05 17.05434	21 53 37.07	+23 59 58.5	061
/1989c1	1990 05 19.03832	21 27 41.92	+20 07 51.0	047
/1989c1	1990 05 19.04041	21 27 40.32	+20 07 36.9	047
/1989c1	1990 05 20.97794	20 59 45.07	+15 27 53.7	047
/1989c1	1990 05 21.03690	20 58 51.95	+15 18 38.6	061
/1989c1	1990 05 21.03771	20 58 51.09	+15 18 32.8	061
/1989c1	1990 05 21.03831	20 58 50.51	+15 18 26.1	061
/1989c1	1990 05 21.03880	20 58 50.30	+15 18 21.0	061
/1989c1	1990 05 21.95000	20 44 53.70	+12 47 59.6	095
/1989c1	1990 05 21.99166	20 44 14.50	+12 40 54.2	095
/1989c1	1990 05 23.92922	20 13 17.87	+06 48 13.5	095
/1989c1	1990 05 23.94306	20 13 04.04	+06 45 35.6	095
/1989c1	1990 06 05.55249	17 15 02.99	-24 56 06.0	897
/1989c1	1990 06 05.55382	17 15 02.22	-24 56 15.1	897
/1989c1	1990 06 05.56453	17 14 55.61	-24 57 02.5	897
/1989c1	1990 06 05.56568	17 14 55.08	-24 57 06.7	897

Periodic Comet Schwassmann-Wachmann 3

/1989d1	1990 10 17.22227	01 24 56.47	-08 47 57.4	801
/1989d1	1990 10 17.23341	01 24 55.42	-08 47 57.1	801
/1989d1	1990 10 21.20913	01 19 24.22	-08 42 49.8	801
/1989d1	1990 10 21.21966	01 19 23.45	-08 42 48.8	801

Comet Skorichenko-George (1989e1)

/1989e1	1990 10 30.83003	09 15 01.57	-21 32 54.3	14 T 372
/1989e1	1990 10 30.83715	09 15 01.79	-21 33 03.7	372

Periodic Comet Wild 4

/1990a	1990 03 20.79306	08 56 14.40	+22 02 20.0	095
/1990a	1990 03 20.81597	08 56 14.32	+22 02 15.8	095
/1990a	1990 03 26.84861	08 56 37.08	+21 42 30.8	095
/1990a	1990 03 26.86806	08 56 37.18	+21 42 26.7	095
/1990a	1990 03 30.72535	08 57 32.60	+21 27 01.2	095
/1990a	1990 03 30.73889	08 57 32.80	+21 26 57.4	095
/1990a	1990 05 17.81447	09 44 30.68	+15 40 51.2	095
/1990a	1990 05 17.82836	09 44 31.94	+15 40 43.6	095

Comet Cernis-Kiuchi-Nakamura (1990b)

/1990b	1990 03 27.63448	02 16 25.57	+49 44 49.2	186
/1990b	1990 03 27.64003	02 16 27.72	+49 44 53.5	186
/1990b	1990 03 28.63658	02 24 09.76	+50 07 40.8	186
/1990b	1990 03 28.64212	02 24 12.60	+50 07 47.7	186
/1990b	1990 03 28.65147	02 24 16.76	+50 08 10.0	186
/1990b	1990 04 10.66764	04 16 44.92	+51 56 19.6	210
/1990b	1990 04 10.80486	04 17 58.73	+51 55 18.9	061
/1990b	1990 04 10.80677	04 18 00.70	+51 55 15.9	061
/1990b	1990 04 10.80972	04 18 01.89	+51 55 15.6	061
/1990b	1990 04 10.81476	04 18 04.36	+51 55 13.8	061
/1990b	1990 04 11.81007	04 26 57.82	+51 46 45.8	061

/1990b	1990 04 11.81354	04 26 59.83	+51 46 45.2	061
/1990b	1990 04 11.81742	04 27 02.05	+51 46 42.9	061
/1990b	1990 04 20.69036	05 41 38.80	+48 53 59.6	210
/1990b	1990 04 23.66719	06 03 51.28	+47 23 46.2	210

Comet Austin (1990c)

/1990c	1990 07 11.86216	00 01 18.28	+29 40 59.6	095
/1990c	1990 07 11.87743	00 01 17.76	+29 41 00.9	095
/1990c	1990 07 17.84826	23 55 28.82	+29 33 03.4	095
/1990c	1990 07 17.86979	23 55 27.20	+29 32 59.6	095
/1990c	1990 07 23.85524	23 46 15.02	+29 07 31.8	095
/1990c	1990 07 23.88021	23 46 12.26	+29 07 24.1	095
/1990c	1990 07 25.84167	23 42 12.87	+28 53 19.9	095
/1990c	1990 07 25.85625	23 42 10.88	+28 53 11.6	095
/1990c	1990 07 25.87153	23 42 08.80	+28 53 04.8	095
/1990c	1990 07 27.82535	23 37 34.54	+28 35 12.5	095
/1990c	1990 07 27.86146	23 37 29.07	+28 34 50.3	095
/1990c	1990 08 04.50422	23 12 08.61	+26 29 38.6	897
/1990c	1990 08 04.56968	23 11 51.63	+26 28 03.9	897
/1990c	1990 08 04.70758	23 11 15.40	+26 24 40.5	897
/1990c	1990 08 04.70816	23 11 15.24	+26 24 39.2	897
/1990c	1990 08 04.70874	23 11 15.10	+26 24 38.6	897
/1990c	1990 08 08.79375	22 50 42.63	+24 15 34.6	095
/1990c	1990 08 08.82083	22 50 33.12	+24 14 30.8	095
/1990c	1990 08 09.78090	22 44 47.94	+23 34 31.5	095
/1990c	1990 08 09.80729	22 44 38.10	+23 33 23.6	095
/1990c	1990 08 10.77813	22 38 24.04	+22 48 13.4	095
/1990c	1990 08 10.78854	22 38 19.86	+22 47 43.6	095
/1990c	1990 08 10.80104	22 38 14.73	+22 47 06.8	095
/1990c	1990 08 10.81215	22 38 10.39	+22 46 33.7	095
/1990c	1990 08 10.98195	22 37 01.99	+22 38 09.0	479
/1990c	1990 08 11.76973	22 31 35.16	+21 56 45.8	095
/1990c	1990 08 11.80029	22 31 22.09	+21 55 05.8	095
/1990c	1990 08 11.94248	22 30 20.84	+21 47 17.1	479
/1990c	1990 08 13.77674	22 16 18.16	+19 53 41.8	095
/1990c	1990 08 13.78507	22 16 14.09	+19 53 07.6	095
/1990c	1990 08 13.83438	22 15 49.82	+19 49 46.4	095
/1990c	1990 08 13.84618	22 15 43.95	+19 48 57.0	095
/1990c	1990 08 14.50075	22 10 16.22	+19 02 18.9	897
/1990c	1990 08 14.50243	22 10 15.33	+19 02 10.4	897
/1990c	1990 08 14.51337	22 10 09.76	+19 01 22.2	897
/1990c	1990 08 14.59201	22 09 29.02	+18 55 33.3	897
/1990c	1990 08 14.59248	22 09 28.72	+18 55 31.7	897
/1990c	1990 08 14.78924	22 07 47.08	+18 40 38.8	095
/1990c	1990 08 14.79896	22 07 42.04	+18 39 55.3	095
/1990c	1990 08 14.80938	22 07 36.54	+18 39 07.4	095
/1990c	1990 08 14.81979	22 07 31.10	+18 38 19.6	095
/1990c	1990 08 15.57899	22 00 44.63	+17 38 00.9	897
/1990c	1990 08 15.59184	22 00 37.49	+17 36 57.2	897
/1990c	1990 08 15.59326	22 00 36.68	+17 36 50.3	897
/1990c	1990 08 15.77448	21 58 57.14	+17 21 38.0	095
/1990c	1990 08 15.78490	21 58 51.43	+17 20 46.2	095
/1990c	1990 08 16.04538	21 56 24.73	+16 58 27.4	479
/1990c	1990 08 16.75712	21 49 35.53	+15 54 26.5	095
/1990c	1990 08 16.76753	21 49 29.38	+15 53 29.1	095
/1990c	1990 08 16.98510	21 47 19.89	+15 33 01.2	479
/1990c	1990 08 17.80851	21 38 57.44	+14 11 21.0	095
/1990c	1990 08 17.82031	21 38 50.03	+14 10 08.4	095
/1990c	1990 08 18.80920	21 28 14.80	+12 23 23.4	095

/1990c	1990 08 18.82031	21 28 07.37	+12 22 08.2	095
/1990c	1990 08 19.79462	21 17 08.26	+10 27 26.5	095
/1990c	1990 08 19.80503	21 17 01.04	+10 26 09.6	095
/1990c	1990 08 20.53536	21 08 27.16	+08 54 19.6	897
/1990c	1990 08 20.76406	21 05 43.00	+08 24 28.8	095
/1990c	1990 08 20.77448	21 05 35.38	+08 23 07.8	095
/1990c	1990 08 21.80434	20 52 55.18	+06 02 59.2	095
/1990c	1990 08 21.81476	20 52 47.82	+06 01 37.5	095
/1990c	1990 08 21.81753	20 52 45.73	+06 01 14.2	095
/1990c	1990 08 21.82795	20 52 37.91	+05 59 46.7	095
/1990c	1990 08 22.79352	20 40 19.19	+03 40 40.3	188
/1990c	1990 08 23.57957	20 30 02.76	+01 42 52.6	897
/1990c	1990 08 23.58108	20 30 01.50	+01 42 38.2	897
/1990c	1990 08 23.86129	20 26 19.55	+00 59 47.0	479
/1990c	1990 08 24.76823	20 14 09.90	-01 20 51.2	188
/1990c	1990 08 24.76927	20 14 09.06	-01 21 00.6	188
/1990c	1990 08 25.81701	19 59 54.88	-04 05 53.0	188
/1990c	1990 08 25.81800	19 59 54.09	-04 06 03.2	188
/1990c	1990 08 26.83613	19 45 59.93	-06 46 09.8	553
/1990c	1990 08 26.84586	19 45 52.14	-06 47 42.5	553
/1990c	1990 08 26.85488	19 45 44.43	-06 49 02.9	553
/1990c	1990 08 26.86322	19 45 37.52	-06 50 23.4	553
/1990c	1990 08 26.87294	19 45 29.49	-06 51 54.7	553
/1990c	1990 08 27.81738	19 32 36.84	-09 17 55.0	553
/1990c	1990 08 27.83058	19 32 25.94	-09 19 53.6	553
/1990c	1990 08 27.84377	19 32 15.03	-09 21 55.2	553
/1990c	1990 08 28.87848	19 18 16.04	-11 56 35.1	553
/1990c	1990 08 28.88855	19 18 08.02	-11 58 11.2	553
/1990c	1990 08 28.90036	19 17 58.18	-11 59 59.1	553
/1990c	1990 08 29.76198	19 06 32.44	-14 03 08.2	095
/1990c	1990 08 29.76406	19 06 30.80	-14 03 25.6	095
/1990c	1990 08 29.77101	19 06 25.27	-14 04 23.5	095
/1990c	1990 08 29.77309	19 06 23.63	-14 04 40.9	095
/1990c	1990 09 16.07361	16 30 33.75	-34 31 52.9	809
/1990c	1990 09 16.07709	16 30 32.66	-34 31 58.1	809
/1990c	1990 09 16.08057	16 30 31.57	-34 32 03.1	809
/1990c	1990 09 21.01388	16 08 08.34	-36 18 22.7	809
/1990c	1990 10 27.39315	14 50 47.05	-40 19 37.8	413

Comet Tsuchiya-Kiuchi (1990i)

/1990i	1990 07 20.81771	12 16 02.62	+28 16 31.8	095
/1990i	1990 07 23.80694	12 10 39.87	+27 06 17.1	095
/1990i	1990 07 23.82639	12 10 37.86	+27 05 49.3	095
/1990i	1990 07 25.80278	12 07 21.82	+26 20 17.6	095
/1990i	1990 07 25.81250	12 07 21.07	+26 20 03.6	095
/1990i	1990 08 03.46354	11 55 11.95	+23 09 11.2	897
/1990i	1990 08 03.46580	11 55 12.03	+23 09 06.8	897
/1990i	1990 08 04.44664	11 54 00.51	+22 48 22.1	897
/1990i	1990 08 04.45041	11 53 59.94	+22 48 18.6	897
/1990i	1990 08 04.45376	11 53 59.89	+22 48 12.0	897
/1990i	1990 08 04.45787	11 53 59.85	+22 48 06.2	897
/1990i	1990 10 28.75159	10 35 14.74	-08 07 43.5	413
/1990i	1990 10 28.79385	10 35 10.31	-08 09 18.6	8.5T 372
/1990i	1990 10 28.79531	10 35 10.24	-08 09 22.3	372
/1990i	1990 10 30.84387	10 31 31.15	-09 24 14.9	8.5T 372

Periodic Comet Mueller 2

/1990j	1990 10 15.15891	00 30 54.16	+08 56 50.7	801
/1990j	1990 10 15.81620	00 30 36.94	+08 51 02.6	046

/1990j	1990	10	15.82894	00	30	36.30	+08	50	54.7		046
/1990j	1990	10	16.20338	00	30	26.08	+08	47	39.6		801
/1990j	1990	10	16.81429	00	30	10.33	+08	42	14.4		046
/1990j	1990	10	16.82708	00	30	10.05	+08	42	09.9		046
/1990j	1990	10	17.16536	00	30	01.10	+08	39	14.9		801
/1990j	1990	10	17.25642	00	29	58.90	+08	38	29.7	16.3T	675
/1990j	1990	10	17.28368	00	29	58.00	+08	38	14.9		675
/1990j	1990	10	20.02317	00	28	51.96	+08	14	26.8		801
/1990j	1990	10	20.04965	00	28	51.30	+08	14	13.7		801
/1990j	1990	10	21.01631	00	28	29.77	+08	05	57.9		801
/1990j	1990	10	21.04066	00	28	29.18	+08	05	45.1		801
/1990j	1990	10	26.65278	00	26	45.44	+07	19	25.0	17 T	372
/1990j	1990	11	11.54271	00	26	05.38	+05	34	40.1	17.5T	372

Periodic Comet Holt-Olmstead

/1990k	1990	10	16.21191	01	13	03.45	+11	38	53.0		801
/1990k	1990	10	16.22363	01	13	02.70	+11	38	57.2		801
/1990k	1990	10	20.22351	01	08	57.42	+12	04	16.7		801
/1990k	1990	10	20.24838	01	08	55.90	+12	04	25.3		801
/1990k	1990	11	11.59653	00	51	28.81	+14	11	58.5	17.5T	372

Periodic Comet Mueller 3

/1990l	1990	10	16.21639	01	24	09.54	-04	29	50.7		801
/1990l	1990	10	21.20338	01	21	10.03	-04	51	38.4		801
/1990l	1990	11	19.47045	01	08	24.19	-05	38	57.2		413
/1990l	1990	11	21.49340	01	08	00.81	-05	36	47.7	18 T	372
/1990l	1990	11	23.61336	01	07	41.51	-05	33	43.7	18.5T	372

Periodic Comet Harrington-Abell

/1990m	1990	10	22.25874	00	47	07.57	+16	59	50.4		691
/1990m	1990	10	22.28016	00	47	06.35	+16	59	45.8	21.0N	691
/1990m	1990	10	22.30138	00	47	05.14	+16	59	41.5		691
/1990m	1990	10	23.17550	00	46	16.82	+16	56	33.6	20.8N	691
/1990m	1990	10	23.18646	00	46	16.25	+16	56	31.1		691
/1990m	1990	10	23.19733	00	46	15.60	+16	56	28.8		691
/1990m	1990	10	23.889	00	45	37.57	+16	53	58.8	20.3N	586
/1990m	1990	10	23.942	00	45	34.49	+16	53	46.9		586

Periodic Comet Taylor

/1990n	1990	11	11.50556	07	24	10.87	+09	14	16.4	19.7T	1 691
/1990n	1990	11	11.51634	07	24	11.41	+09	14	19.1		1 691
/1990n	1990	11	11.52672	07	24	11.95	+09	14	22.8		1 691
/1990n	1990	11	11.75869	07	24	24.23	+09	15	30.9	19.5T	372
/1990n	1990	11	12.48858	07	25	01.54	+09	19	04.9		691
/1990n	1990	11	12.51398	07	25	02.75	+09	19	12.1		691
/1990n	1990	11	12.52509	07	25	03.32	+09	19	15.6		691
/1990n	1990	11	12.52999	07	25	03.51	+09	19	16.9		691
/1990n	1990	11	12.54031	07	25	04.07	+09	19	20.4		691
/1990n	1990	11	15.33176	07	27	19.35	+09	34	14.6		801
/1990n	1990	11	15.33946	07	27	19.72	+09	34	17.5		801
/1990n	1990	11	21.35541	07	31	27.20	+10	13	14.8		801
/1990n	1990	11	21.37688	07	31	28.16	+10	13	26.2		801

Periodic Comet Shoemaker-Levy

/1990o	1990	11	10.55809	01	52	15.5	-03	21	27	13.5T	2 897
/1990o	1990	11	10.56147	01	52	14.9	-03	21	17		2 897
/1990o	1990	11	15.31909	01	48	49.29	-00	24	31.5		675
/1990o	1990	11	16.27256	01	48	14.82	+00	09	47.4		675
/1990o	1990	11	16.30313	01	48	13.59	+00	10	54.2		675

/1990o	1990 11 17.20220	01 47 42.92	+00 42 57.0			801
/1990o	1990 11 17.20500	01 47 42.83	+00 43 03.0			801
/1990o	1990 11 17.20690	01 47 42.77	+00 43 07.0			801
/1990o	1990 11 17.26458	01 47 40.97	+00 45 09.7			675
/1990o	1990 11 17.53160	01 47 32.59	+00 54 39.2	14	T	402
/1990o	1990 11 17.54348	01 47 32.21	+00 55 02.2			402
/1990o	1990 11 18.27309	01 47 09.40	+01 20 35.4			657
/1990o	1990 11 18.43299	01 47 04.99	+01 26 14.5			373
/1990o	1990 11 18.45081	01 47 04.34	+01 26 52.5	13.5T		373
/1990o	1990 11 18.55000	01 47 01.08	+01 30 20.2	14	T	372
/1990o	1990 11 18.56430	01 47 00.71	+01 30 49.0			372
/1990o	1990 11 20.12506	01 46 17.46	+02 24 34.3			801
/1990o	1990 11 20.13807	01 46 17.08	+02 25 02.4			801
/1990o	1990 11 20.40295	01 46 10.18	+02 33 57.8			657
/1990o	1990 11 20.86852	01 45 59.22	+02 49 48.4		3	494
/1990o	1990 11 20.90451	01 45 58.31	+02 51 01.0			984
/1990o	1990 11 20.97943	01 45 56.90	+02 53 33.5			801
/1990o	1990 11 20.98100	01 45 56.79	+02 53 36.0			801
/1990o	1990 11 21.56076	01 45 42.95	+03 13 06.0	14	T	897
/1990o	1990 11 21.56713	01 45 43.02	+03 13 20.7			897
/1990o	1990 11 23.48675	01 45 05.47	+04 16 33.7	14	T	897
/1990o	1990 11 23.51782	01 45 04.63	+04 17 36.4			897

Note 1: object diffuse with 8" coma and indications of a 9" tail in p.a.
 350 . 2: prediscovery image. 3: comet image weak and diffuse.

* * * * *

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 Thieu, France							
0.9-m Schmidt telescope							
1990 VB *	1990 11	08.79453	22 12 31.75	+22 36 15.3	17	V	010
1990 VB	1990 11	08.80980	22 12 36.37	+22 36 06.2			010
1990 VB	1990 11	08.83412	22 12 44.04	+22 35 50.5			010
1990 VB	1990 11	09.76111	22 17 39.04	+22 26 03.4			010
1990 VB	1990 11	12.79606	22 33 35.02	+21 52 10.5			010
1990 VB	1990 11	12.97436	22 34 29.86	+21 50 03.0			010
1990 VB	1990 11	14.81950	22 44 03.50	+21 28 19.2			010

017 Hoher List

E. W. Elst, Observatoire Royal de Belgique, Avenue Circulaire 3, B-1180
 Brussels, Belgium

Observers E. W. Elst, E. Geyer

Measurer E. W. Elst

1990 UR *	1990 10	23.01563	02 05 00.79	+16 08 25.2	17.5		017
1990 UR	1990 10	24.03819	02 04 03.31	+16 04 31.2			017
1990 US *	1990 10	23.01563	02 11 01.02	+17 24 01.9	17.3		017
1990 US	1990 10	24.03819	02 09 55.92	+17 22 08.9			017
1226	1990 10	23.01563	01 58 44.37	+16 19 23.3	16.9		017
1226	1990 10	24.03819	01 57 41.08	+16 17 37.1			017
1358	1990 10	23.01563	02 00 40.94	+12 58 06.4	17.0		017
1358	1990 10	24.03819	01 59 39.56	+12 53 42.1			017
1494	1990 10	23.01563	02 18 35.07	+12 11 33.1	16.0		017
1494	1990 10	24.03819	02 17 38.07	+12 04 34.9			017
2203	1990 10	23.01563	02 22 29.42	+13 24 34.3	16.5		017
2514	1990 10	23.01563	02 03 20.73	+14 52 53.2	17.2		017
2514	1990 10	24.03819	02 02 24.03	+14 49 03.6			017
2591	1990 10	24.03819	01 57 30.03	+13 25 55.6	17.0		017
3018	1990 10	23.01563	02 06 18.75	+15 13 57.3	16.8		017
3018	1990 10	24.03819	02 05 18.62	+15 06 11.4			017
3168	1990 10	23.01563	02 10 23.35	+16 21 57.0	17.3		017
3168	1990 10	24.03819	02 09 27.05	+16 20 34.0			017
3399	1990 10	23.01563	02 15 19.39	+13 43 39.4	17.5		017
3399	1990 10	24.03819	02 14 29.63	+13 39 29.3			017
3555	1990 10	23.01563	02 19 14.24	+16 16 23.8	17.2		017
3555	1990 10	24.03819	02 18 09.65	+16 16 37.3			017
3864	1990 10	23.01563	02 15 07.64	+14 23 34.0	17.2		017
3864	1990 10	24.03819	02 14 10.78	+14 20 52.5			017
4089	1990 10	23.01563	02 04 51.75	+14 45 20.8	17.2		017
4089	1990 10	24.03819	02 03 44.91	+14 39 40.7			017

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	12.94771	01	26	02.23	-07	31	01.2	17.9	033
1967	GM1	1990	10	12.98938	01	26	00.34	-07	31	09.9		033
1967	GM1	1990	10	13.96229	01	25	13.12	-07	34	15.3		033
1967	GM1	1990	10	14.96646	01	24	24.38	-07	37	18.3		033
1979	SU2	1990	10	10.84493	01	21	28.90	+15	18	44.7	17.4	033
1979	SU2	1990	10	11.86993	01	20	36.88	+15	10	45.0		033
1979	SU2	1990	10	11.91646	01	20	34.44	+15	10	22.6		033
1980	SQ	1990	10	11.82201	00	32	40.11	+08	39	07.2	16.5	033
1980	SQ	1990	10	12.82410	00	31	52.25	+08	29	44.7		033
1980	SQ	1990	10	12.86924	00	31	50.04	+08	29	18.7		033
1980	SQ	1990	10	13.85049	00	31	04.12	+08	20	08.5		033
1980	SQ	1990	10	14.84840	00	30	18.19	+08	10	49.3		033
1981	CB1	1990	10	13.94007	02	49	25.70	+15	52	46.5	17.2	033
1981	CB1	1990	10	13.98451	02	49	23.54	+15	52	46.6		033
1981	CB1	1990	10	14.94285	02	48	38.46	+15	52	43.3		033
1981	CB1	1990	10	18.10604	02	45	58.10	+15	51	51.8		033
1981	EP20	1990	10	11.94019	02	01	13.80	+12	52	22.6		033
1981	EP20	1990	10	12.92063	02	00	26.74	+12	50	46.6	17.2	033
1981	EP20	1990	10	12.96924	02	00	24.20	+12	50	41.5		033
1981	EP20	1990	10	13.91715	01	59	37.76	+12	49	02.2		033
1981	EP20	1990	10	14.91854	01	58	47.21	+12	47	10.3		033
1981	EP20	1990	10	18.08382	01	56	01.97	+12	40	41.3		033
1984	SQ4	1990	10	13.94007	02	45	33.70	+15	57	33.6	18.6	033
1984	SQ4	1990	10	13.98451	02	45	32.04	+15	57	15.2		033
1984	SQ4	1990	10	14.94285	02	44	56.04	+15	50	37.8		033
1984	SQ4	1990	10	18.10604	02	42	52.32	+15	28	13.4		033
1986	RT2	1990	10	14.03035	04	10	53.29	+23	24	22.4	18.5	033
1986	RT2	1990	10	15.01368	04	10	33.88	+23	24	37.8		033
1986	RT2	1990	10	15.06160	04	10	32.79	+23	24	38.5		033
1986	RT2	1990	10	18.12826	04	09	18.88	+23	24	32.8		033
1986	RT2	1990	10	18.16021	04	09	17.93	+23	24	31.8		033
1990	SH1	1990	10	11.82201	00	38	58.29	+08	13	23.7	15.8	033
1990	SH1	1990	10	12.82410	00	38	25.49	+08	01	26.2		033
1990	SH1	1990	10	12.86924	00	38	23.97	+08	00	53.5		033
1990	SH1	1990	10	13.85049	00	37	52.61	+07	49	11.8		033
1990	SH1	1990	10	14.84840	00	37	21.18	+07	37	19.2		033
1990	SN1	1990	10	11.82201	00	38	43.71	+09	02	41.7	16.1	033
1990	SN1	1990	10	12.82410	00	37	54.09	+08	53	45.2		033
1990	SN1	1990	10	12.86924	00	37	51.78	+08	53	21.3		033
1990	SN1	1990	10	13.85049	00	37	03.95	+08	44	34.3		033
1990	SN1	1990	10	14.84840	00	36	15.94	+08	35	38.4		033
1990	TC1	1990	10	11.94019	02	09	59.58	+13	25	47.3		033
1990	TC1	1990	10	12.92063	02	09	19.22	+13	18	00.0	17.8	033
1990	TC1	1990	10	12.96924	02	09	17.04	+13	17	36.8		033
1990	TC1	1990	10	13.91715	02	08	36.89	+13	09	56.5		033
1990	TC1	1990	10	14.91854	02	07	53.09	+13	01	43.0		033
1990	TC1	1990	10	18.08382	02	05	27.89	+12	34	58.7		033
1990	TO3	1990	10	11.94019	02	02	07.17	+12	43	16.0		033
1990	TO3	* 1990	10	12.92063	02	01	21.65	+12	38	49.9	18.8	033
1990	TO3	1990	10	12.96924	02	01	19.26	+12	38	36.0		033
1990	TO3	1990	10	13.91715	02	00	34.77	+12	34	14.9		033
1990	TO3	1990	10	14.91854	01	59	46.91	+12	29	34.1		033
1990	TO3	1990	10	18.08382	01	57	13.02	+12	14	27.3		033
1990	TP3	1990	10	11.94019	02	03	22.71	+15	00	12.3		033
1990	TP3	* 1990	10	12.92063	02	02	33.70	+14	58	36.6	19.0	033
1990	TP3	1990	10	12.96924	02	02	31.08	+14	58	31.9		033

1990	TP3	1990	10	13.91715	02	01	42.80	+14	56	50.5		033
1990	TP3	1990	10	14.91854	02	00	50.60	+14	54	57.1		033
1990	TP3	1990	10	18.08382	01	58	00.52	+14	48	11.1		033
1990	TQ3	1990	10	11.94019	02	03	54.47	+13	57	08.3		033
1990	TQ3	* 1990	10	12.92063	02	03	06.34	+13	56	44.9	19.1	033
1990	TQ3	1990	10	12.96924	02	03	03.78	+13	56	43.2		033
1990	TQ3	1990	10	13.91715	02	02	16.50	+13	56	15.8		033
1990	TQ3	1990	10	14.91854	02	01	25.72	+13	55	44.1		033
1990	TQ3	1990	10	18.08382	01	58	41.18	+13	53	36.4		033
1990	TR3	1990	10	11.94019	02	04	13.45	+15	34	46.5		033
1990	TR3	* 1990	10	12.92063	02	03	23.85	+15	31	17.1	19.3	033
1990	TR3	1990	10	12.96924	02	03	21.16	+15	31	07.4		033
1990	TR3	1990	10	13.91715	02	02	32.32	+15	27	35.5		033
1990	TR3	1990	10	14.91854	02	01	39.68	+15	23	45.2		033
1990	TR3	1990	10	18.08382	01	58	47.91	+15	10	44.5		033
1990	TS3	1990	10	11.94019	02	04	36.48	+14	23	31.8		033
1990	TS3	* 1990	10	12.92063	02	03	47.26	+14	16	46.2	18.9	033
1990	TS3	1990	10	12.96924	02	03	44.64	+14	16	26.5		033
1990	TS3	1990	10	13.91715	02	02	56.20	+14	09	46.4		033
1990	TS3	1990	10	14.91854	02	02	04.03	+14	02	37.4		033
1990	TS3	1990	10	18.08382	01	59	14.16	+13	39	15.2		033
1990	TT3	1990	10	11.94019	02	05	50.63	+14	51	52.4		033
1990	TT3	* 1990	10	12.92063	02	04	51.43	+14	51	39.0	19.2	033
1990	TT3	1990	10	12.96924	02	04	48.33	+14	51	37.9		033
1990	TT3	1990	10	13.91715	02	03	50.06	+14	51	17.4		033
1990	TT3	1990	10	14.91854	02	02	47.49	+14	50	47.7		033
1990	TT3	1990	10	18.08382	01	59	23.80	+14	48	27.0		033
1990	TU3	1990	10	11.94019	02	06	40.91	+14	58	56.4		033
1990	TU3	* 1990	10	12.92063	02	05	47.40	+14	58	06.8	19.5	033
1990	TU3	1990	10	12.96924	02	05	44.53	+14	58	03.0		033
1990	TU3	1990	10	13.91715	02	04	51.51	+14	57	06.4		033
1990	TU3	1990	10	14.91854	02	03	54.17	+14	55	59.1		033
1990	TU3	1990	10	18.08382	02	00	45.11	+14	51	34.0		033
1990	TV3	1990	10	11.94019	02	07	13.96	+13	52	37.8		033
1990	TV3	* 1990	10	12.92063	02	06	30.42	+13	47	32.4	19.1	033
1990	TV3	1990	10	12.96924	02	06	28.04	+13	47	18.5		033
1990	TV3	1990	10	13.91715	02	05	44.78	+13	42	14.6		033
1990	TV3	1990	10	14.91854	02	04	57.82	+13	36	47.8		033
1990	TV3	1990	10	18.08382	02	02	22.96	+13	18	48.0		033
1990	TW3	1990	10	11.94019	02	07	18.94	+13	42	18.4		033
1990	TW3	* 1990	10	12.92063	02	06	32.93	+13	34	54.4	18.0	033
1990	TW3	1990	10	12.96924	02	06	30.49	+13	34	32.8		033
1990	TW3	1990	10	13.91715	02	05	44.96	+13	27	16.2		033
1990	TW3	1990	10	14.91854	02	04	55.78	+13	19	27.8		033
1990	TW3	1990	10	18.08382	02	02	14.57	+12	54	00.8		033
1990	TX3	1990	10	11.94019	02	07	33.16	+14	29	54.2		033
1990	TX3	* 1990	10	12.92063	02	06	42.91	+14	29	33.1	19.9	033
1990	TX3	1990	10	12.96924	02	06	40.20	+14	29	31.8		033
1990	TX3	1990	10	13.91715	02	05	50.64	+14	29	05.2		033
1990	TX3	1990	10	14.91854	02	04	57.24	+14	28	31.5		033
1990	TX3	1990	10	18.08382	02	02	02.76	+14	26	12.7		033
1990	TY3	1990	10	11.94019	02	07	44.34	+14	54	52.8		033
1990	TY3	* 1990	10	12.92063	02	06	45.74	+14	54	41.9	19.0	033
1990	TY3	1990	10	12.96924	02	06	42.70	+14	54	41.8		033
1990	TY3	1990	10	13.91715	02	05	44.98	+14	54	23.8		033
1990	TY3	1990	10	14.91854	02	04	42.92	+14	53	58.3		033
1990	TY3	1990	10	18.08382	02	01	20.54	+14	51	48.9		033
1990	TZ3	1990	10	11.94019	02	07	31.52	+13	10	43.6		033
1990	TZ3	* 1990	10	12.92063	02	06	48.11	+13	06	32.7	18.7	033

1990	TZ3	1990	10	12.96924	02	06	45.81	+13	06	20.1	033		
1990	TZ3	1990	10	13.91715	02	06	03.22	+13	02	14.0	033		
1990	TZ3	1990	10	14.91854	02	05	17.48	+12	57	49.1	033		
1990	TZ3	1990	10	18.08382	02	02	49.27	+12	43	29.0	033		
1990	TA4	1990	10	11.94019	02	08	40.24	+14	46	40.0	033		
1990	TA4	*	1990	10	12.92063	02	07	56.21	+14	35	54.4	17.7	033
1990	TA4	1990	10	12.96924	02	07	53.89	+14	35	23.1	033		
1990	TA4	1990	10	13.91715	02	07	10.61	+14	24	53.9	033		
1990	TA4	1990	10	14.91854	02	06	24.10	+14	13	42.1	033		
1990	TA4	1990	10	18.08382	02	03	53.36	+13	37	44.6	033		
1990	TB4	1990	10	11.94019	02	08	49.33	+15	09	20.0	033		
1990	TB4	*	1990	10	12.92063	02	08	01.78	+15	05	22.8	18.5	033
1990	TB4	1990	10	12.96924	02	07	59.25	+15	05	10.4	033		
1990	TB4	1990	10	13.91715	02	07	12.37	+15	01	13.5	033		
1990	TB4	1990	10	14.91854	02	06	21.93	+14	56	57.1	033		
1990	TB4	1990	10	18.08382	02	03	37.13	+14	42	44.6	033		
1990	TC4	1990	10	11.94019	02	09	19.64	+13	47	58.6	033		
1990	TC4	*	1990	10	12.92063	02	08	37.50	+13	43	53.6	18.9	033
1990	TC4	1990	10	12.96924	02	08	35.25	+13	43	41.3	033		
1990	TC4	1990	10	13.91715	02	07	53.84	+13	39	39.3	033		
1990	TC4	1990	10	14.91854	02	07	09.28	+13	35	19.4	033		
1990	TC4	1990	10	18.08382	02	04	44.65	+13	21	11.2	033		
1990	TD4	1990	10	11.94019	02	09	44.89	+13	15	17.8	033		
1990	TD4	*	1990	10	12.92063	02	08	50.24	+13	14	36.6	19.3	033
1990	TD4	1990	10	12.96924	02	08	47.35	+13	14	33.4	033		
1990	TD4	1990	10	13.91715	02	07	53.21	+13	13	47.1	033		
1990	TD4	1990	10	14.91854	02	06	54.64	+13	12	52.4	033		
1990	TD4	1990	10	18.08382	02	03	41.74	+13	09	22.5	033		
1990	TE4	1990	10	11.94019	02	10	27.99	+13	04	45.9	033		
1990	TE4	*	1990	10	12.92063	02	09	37.17	+13	01	56.9	18.6	033
1990	TE4	1990	10	12.96924	02	09	34.42	+13	01	48.1	033		
1990	TE4	1990	10	13.91715	02	08	44.39	+12	58	59.3	033		
1990	TE4	1990	10	14.91854	02	07	50.27	+12	55	54.2	033		
1990	TE4	1990	10	18.08382	02	04	53.70	+12	45	38.2	033		
1990	TF4	1990	10	11.94019	02	10	36.72	+15	35	36.7	033		
1990	TF4	*	1990	10	12.92063	02	09	46.70	+15	31	31.8	18.4	033
1990	TF4	1990	10	12.96924	02	09	44.08	+15	31	19.5	033		
1990	TF4	1990	10	13.91715	02	08	54.75	+15	27	14.8	033		
1990	TF4	1990	10	14.91854	02	08	01.51	+15	22	49.1	033		
1990	TF4	1990	10	18.08382	02	05	07.23	+15	08	00.6	033		
1990	TG4	1990	10	11.94019	02	11	03.14	+13	37	08.8	033		
1990	TG4	*	1990	10	12.92063	02	10	20.44	+13	33	38.2	19.2	033
1990	TG4	1990	10	12.96924	02	10	18.13	+13	33	28.1	033		
1990	TG4	1990	10	13.91715	02	09	36.18	+13	30	02.0	033		
1990	TG4	1990	10	14.91854	02	08	51.28	+13	26	19.4	033		
1990	TG4	1990	10	18.08382	02	06	26.51	+13	14	18.2	033		
1990	TH4	1990	10	11.94019	02	11	10.75	+14	51	16.8	033		
1990	TH4	*	1990	10	12.92063	02	10	22.11	+14	48	37.5	19.7	033
1990	TH4	1990	10	12.96924	02	10	19.62	+14	48	30.7	033		
1990	TH4	1990	10	13.91715	02	09	31.78	+14	45	50.2	033		
1990	TH4	1990	10	14.91854	02	08	40.26	+14	42	55.1	033		
1990	TH4	1990	10	18.08382	02	05	52.61	+14	33	06.5	033		
1990	TJ4	1990	10	11.94019	02	11	49.80	+13	48	28.7	033		
1990	TJ4	*	1990	10	12.92063	02	10	57.45	+13	43	03.1	19.4	033
1990	TJ4	1990	10	12.96924	02	10	54.65	+13	42	46.9	033		
1990	TJ4	1990	10	13.91715	02	10	03.22	+13	37	26.5	033		
1990	TJ4	1990	10	14.91854	02	09	07.96	+13	31	43.1	033		
1990	TJ4	1990	10	18.08382	02	06	09.11	+13	13	07.6	033		
1990	TK4	1990	10	11.94019	02	12	23.59	+15	14	42.9	033		

1990	TK4	*	1990	10	12.92063	02	11	35.41	+15	09	19.6	18.9	033
1990	TK4		1990	10	12.96924	02	11	32.82	+15	09	03.7		033
1990	TK4		1990	10	13.91715	02	10	45.19	+15	03	43.6		033
1990	TK4		1990	10	14.91854	02	09	53.49	+14	57	56.5		033
1990	TK4		1990	10	18.08382	02	07	03.90	+14	38	47.1		033
1990	TD7	*	1990	10	13.94007	02	37	11.22	+16	23	11.2	19.4	033
1990	TD7		1990	10	13.98451	02	37	09.23	+16	23	14.5		033
1990	TD7		1990	10	14.94285	02	36	29.22	+16	23	46.4		033
1990	TD7		1990	10	18.10604	02	34	05.15	+16	24	48.6		033
1990	TE7	*	1990	10	13.94007	02	38	57.22	+14	41	18.8	18.8	033
1990	TE7		1990	10	13.98451	02	38	55.59	+14	41	01.2		033
1990	TE7		1990	10	14.94285	02	38	19.05	+14	34	42.3		033
1990	TE7		1990	10	18.10604	02	36	12.24	+14	13	15.7		033
1990	TF7	*	1990	10	13.94007	02	39	04.20	+17	00	18.8	19.3	033
1990	TF7		1990	10	13.98451	02	39	02.08	+17	00	03.9		033
1990	TF7		1990	10	14.94285	02	38	18.90	+16	53	49.7		033
1990	TF7		1990	10	18.10604	02	35	47.36	+16	32	27.3		033
1990	TG7	*	1990	10	13.94007	02	39	04.36	+14	53	00.4	19.5	033
1990	TG7		1990	10	13.98451	02	39	02.70	+14	52	52.4		033
1990	TG7		1990	10	14.94285	02	38	25.19	+14	49	41.4		033
1990	TH7	*	1990	10	13.94007	02	39	15.84	+16	17	10.1	19.0	033
1990	TH7		1990	10	13.98451	02	39	13.86	+16	17	03.0		033
1990	TH7		1990	10	14.94285	02	38	33.01	+16	14	15.7		033
1990	TH7		1990	10	18.10604	02	36	12.50	+16	04	35.8		033
1990	TJ7	*	1990	10	13.94007	02	39	42.61	+14	15	06.1	19.0	033
1990	TJ7		1990	10	13.98451	02	39	40.98	+14	14	48.6		033
1990	TJ7		1990	10	14.94285	02	39	05.97	+14	08	53.1		033
1990	TJ7		1990	10	18.10604	02	37	00.22	+13	48	29.5		033
1990	TK7	*	1990	10	13.94007	02	40	31.61	+15	40	12.6	18.5	033
1990	TK7		1990	10	13.98451	02	40	29.34	+15	40	17.3		033
1990	TK7		1990	10	14.94285	02	39	40.77	+15	41	33.3		033
1990	TK7		1990	10	18.10604	02	36	54.62	+15	45	21.2		033
1990	TL7	*	1990	10	13.94007	02	40	40.52	+15	35	34.9	19.7	033
1990	TL7		1990	10	13.98451	02	40	38.63	+15	35	26.9		033
1990	TL7		1990	10	14.94285	02	40	00.01	+15	32	02.2		033
1990	TL7		1990	10	18.10604	02	37	45.57	+15	20	12.7		033
1990	TM7	*	1990	10	13.94007	02	42	27.83	+16	37	16.3	17.1	033
1990	TM7		1990	10	13.98451	02	42	25.36	+16	37	15.2		033
1990	TM7		1990	10	14.94285	02	41	32.88	+16	36	41.1		033
1990	TM7		1990	10	18.10604	02	38	31.61	+16	34	10.3		033
1990	TN7	*	1990	10	13.94007	02	42	36.91	+15	12	53.8	18.7	033
1990	TN7		1990	10	13.98451	02	42	35.23	+15	12	40.0		033
1990	TN7		1990	10	14.94285	02	41	58.79	+15	07	35.1		033
1990	TN7		1990	10	18.10604	02	39	49.41	+14	49	57.6		033
1990	TO7	*	1990	10	13.94007	02	43	22.73	+16	39	51.8	18.0	033
1990	TO7		1990	10	13.98451	02	43	19.58	+16	40	02.9		033
1990	TO7		1990	10	14.94285	02	42	12.79	+16	43	38.9		033
1990	TO7		1990	10	18.10604	02	38	22.35	+16	54	38.5		033
1990	TP7	*	1990	10	13.94007	02	44	22.62	+16	54	27.5	19.6	033
1990	TP7		1990	10	13.98451	02	44	20.85	+16	54	20.9		033
1990	TP7		1990	10	14.94285	02	43	42.49	+16	52	05.4		033
1990	TP7		1990	10	18.10604	02	41	28.76	+16	43	59.5		033
1990	TQ7	*	1990	10	13.94007	02	44	34.96	+16	46	01.9	19.4	033
1990	TQ7		1990	10	13.98451	02	44	32.89	+16	45	57.0		033
1990	TQ7		1990	10	14.94285	02	43	50.44	+16	43	56.2		033
1990	TQ7		1990	10	18.10604	02	41	22.71	+16	36	40.1		033
1990	TR7	*	1990	10	13.94007	02	44	56.52	+16	33	33.4	18.4	033
1990	TR7		1990	10	13.98451	02	44	54.66	+16	33	24.9		033
1990	TR7		1990	10	14.94285	02	44	15.50	+16	30	14.4		033

1990	TR7		1990	10	18.10604	02	41	59.40	+16	19	07.5		033
1990	TS7	*	1990	10	13.94007	02	45	04.51	+16	06	48.5	17.8	033
1990	TS7		1990	10	13.98451	02	45	02.47	+16	06	35.3		033
1990	TS7		1990	10	14.94285	02	44	19.65	+16	01	40.8		033
1990	TS7		1990	10	18.10604	02	41	46.70	+15	44	28.3		033
1990	TT7	*	1990	10	13.94007	02	45	09.28	+14	18	45.7	19.9	033
1990	TT7		1990	10	13.98451	02	45	07.34	+14	18	43.1		033
1990	TT7		1990	10	14.94285	02	44	26.02	+14	17	34.0		033
1990	TU7	*	1990	10	13.94007	02	45	14.29	+13	51	56.8	19.1	033
1990	TU7		1990	10	13.98451	02	45	12.42	+13	51	48.6		033
1990	TU7		1990	10	14.94285	02	44	32.62	+13	48	55.4		033
1990	TV7	*	1990	10	13.94007	02	45	15.15	+15	43	36.7	18.9	033
1990	TV7		1990	10	13.98451	02	45	13.40	+15	43	30.2		033
1990	TV7		1990	10	14.94285	02	44	35.94	+15	41	04.1		033
1990	TV7		1990	10	18.10604	02	42	26.62	+15	32	33.3		033
1990	TW7	*	1990	10	13.94007	02	45	28.85	+14	59	46.5	17.6	033
1990	TW7		1990	10	13.98451	02	45	27.00	+14	59	53.3		033
1990	TW7		1990	10	14.94285	02	44	47.54	+15	02	06.4		033
1990	TW7		1990	10	18.10604	02	42	24.26	+15	08	54.6		033
1990	TX7	*	1990	10	13.94007	02	45	47.87	+16	48	15.7	19.8	033
1990	TX7		1990	10	13.98451	02	45	46.03	+16	48	17.9		033
1990	TX7		1990	10	14.94285	02	45	08.20	+16	48	38.0		033
1990	TY7	*	1990	10	13.94007	02	45	48.66	+16	45	12.4	19.6	033
1990	TY7		1990	10	13.98451	02	45	46.51	+16	45	06.4		033
1990	TY7		1990	10	14.94285	02	45	00.75	+16	43	05.5		033
1990	TY7		1990	10	18.10604	02	42	20.72	+16	35	43.3		033
1990	TZ7	*	1990	10	13.94007	02	46	05.14	+16	00	36.0	19.5	033
1990	TZ7		1990	10	13.98451	02	46	03.50	+16	00	28.1		033
1990	TZ7		1990	10	14.94285	02	45	26.09	+15	57	27.5		033
1990	TZ7		1990	10	18.10604	02	43	16.33	+15	46	59.6		033
1990	TA8	*	1990	10	13.94007	02	46	10.08	+16	46	52.7	19.5	033
1990	TA8		1990	10	13.98451	02	46	08.35	+16	46	39.1		033
1990	TA8		1990	10	14.94285	02	45	31.68	+16	41	22.9		033
1990	TA8		1990	10	18.10604	02	43	24.81	+16	23	24.0		033
1990	TB8	*	1990	10	13.94007	02	46	17.47	+13	57	51.8	19.8	033
1990	TB8		1990	10	13.98451	02	46	15.57	+13	57	38.2		033
1990	TB8		1990	10	14.94285	02	45	35.88	+13	52	44.6		033
1990	TC8	*	1990	10	13.94007	02	46	34.52	+15	23	44.3	17.6	033
1990	TC8		1990	10	13.98451	02	46	32.32	+15	23	47.5		033
1990	TC8		1990	10	14.94285	02	45	45.82	+15	24	48.2		033
1990	TC8		1990	10	18.10604	02	43	00.68	+15	27	31.4		033
1990	TD8	*	1990	10	13.94007	02	46	38.11	+15	07	22.7	17.7	033
1990	TD8		1990	10	13.98451	02	46	36.43	+15	07	14.7		033
1990	TD8		1990	10	14.94285	02	46	00.71	+15	04	14.1		033
1990	TD8		1990	10	18.10604	02	43	55.41	+14	53	45.4		033
1990	TE8	*	1990	10	13.94007	02	46	48.97	+14	11	19.7	18.8	033
1990	TE8		1990	10	13.98451	02	46	47.04	+14	11	13.0		033
1990	TE8		1990	10	14.94285	02	46	04.82	+14	08	38.8		033
1990	TE8		1990	10	18.10604	02	43	38.17	+13	59	43.5		033
1990	TF8	*	1990	10	13.94007	02	47	10.76	+17	01	46.1	18.3	033
1990	TF8		1990	10	13.98451	02	47	09.16	+17	01	21.1		033
1990	TF8		1990	10	14.94285	02	46	33.75	+16	52	19.6		033
1990	TF8		1990	10	18.10604	02	44	28.04	+16	21	20.6		033
1990	TG8	*	1990	10	13.94007	02	47	22.71	+14	45	45.9	18.5	033
1990	TG8		1990	10	13.98451	02	47	20.46	+14	45	53.0		033
1990	TG8		1990	10	14.94285	02	46	33.88	+14	48	34.3		033
1990	TG8		1990	10	18.10604	02	43	51.54	+14	57	12.6		033
1990	TH8	*	1990	10	13.94007	02	47	54.46	+14	44	41.3	18.7	033
1990	TH8		1990	10	13.98451	02	47	52.52	+14	44	31.1		033

1990	TH8		1990	10	14.94285	02	47	12.41	+14	40	31.9		033
1990	TH8		1990	10	18.10604	02	44	48.79	+14	26	34.7		033
1990	TJ8	*	1990	10	13.94007	02	48	48.54	+14	28	30.0	19.1	033
1990	TJ8		1990	10	13.98451	02	48	45.92	+14	28	25.1		033
1990	TJ8		1990	10	14.94285	02	47	51.42	+14	26	33.1		033
1990	TJ8		1990	10	18.10604	02	44	43.04	+14	19	54.4		033
1990	TK8	*	1990	10	13.94007	02	49	22.27	+14	45	34.1	19.5	033
1990	TK8		1990	10	13.98451	02	49	20.20	+14	45	32.3		033
1990	TK8		1990	10	14.94285	02	48	38.43	+14	44	49.0		033
1990	TK8		1990	10	18.10604	02	46	14.53	+14	42	04.0		033
1990	TY8		1990	10	11.82201	00	40	15.75	+08	35	34.3	17.5	033
1990	TY8		1990	10	12.82410	00	39	21.14	+08	32	50.0		033
1990	TY8		1990	10	12.86924	00	39	18.64	+08	32	42.9		033
1990	TY8		1990	10	13.85049	00	38	25.88	+08	30	01.3		033
1990	TY8		1990	10	14.84840	00	37	32.62	+08	27	16.8		033
1990	TA9	*	1990	10	10.84493	01	14	55.16	+14	04	38.4	18.6	033
1990	TA9		1990	10	11.86993	01	13	54.47	+14	03	08.2		033
1990	TB9	*	1990	10	10.84493	01	15	34.48	+15	00	45.3	19.5	033
1990	TB9		1990	10	11.86993	01	14	43.10	+14	53	23.2		033
1990	TB9		1990	10	11.91646	01	14	40.76	+14	53	03.0		033
1990	TC9	*	1990	10	10.84493	01	15	34.78	+12	57	47.8	17.8	033
1990	TC9		1990	10	11.86993	01	14	40.50	+12	49	01.6		033
1990	TC9		1990	10	11.91646	01	14	38.01	+12	48	38.5		033
1990	TD9	*	1990	10	10.84493	01	15	37.97	+14	24	04.8	19.6	033
1990	TD9		1990	10	11.86993	01	14	47.83	+14	18	28.6		033
1990	TD9		1990	10	11.91646	01	14	45.57	+14	18	12.7		033
1990	TE9	*	1990	10	10.84493	01	16	03.70	+15	12	52.7	18.3	033
1990	TE9		1990	10	11.86993	01	14	59.70	+15	08	21.0		033
1990	TE9		1990	10	11.91646	01	14	56.72	+15	08	08.6		033
1990	TF9	*	1990	10	10.84493	01	16	07.73	+14	21	14.0	19.0	033
1990	TF9		1990	10	11.86993	01	15	18.67	+14	12	23.5		033
1990	TF9		1990	10	11.91646	01	15	16.46	+14	11	59.7		033
1990	TG9	*	1990	10	10.84493	01	16	22.55	+14	24	24.5	19.1	033
1990	TG9		1990	10	11.86993	01	15	24.42	+14	16	38.9		033
1990	TG9		1990	10	11.91646	01	15	21.78	+14	16	17.5		033
1990	TH9	*	1990	10	10.84493	01	16	32.57	+14	17	00.1	19.1	033
1990	TH9		1990	10	11.86993	01	15	51.64	+14	02	22.7		033
1990	TH9		1990	10	11.91646	01	15	49.73	+14	01	43.4		033
1990	TJ9	*	1990	10	10.84493	01	16	34.16	+13	46	47.6	18.7	033
1990	TJ9		1990	10	11.86993	01	15	38.65	+13	43	39.8		033
1990	TJ9		1990	10	11.91646	01	15	36.12	+13	43	31.9		033
1990	TK9	*	1990	10	10.84493	01	16	41.54	+14	16	38.1	19.2	033
1990	TK9		1990	10	11.86993	01	15	38.54	+14	15	21.5		033
1990	TK9		1990	10	11.91646	01	15	35.63	+14	15	19.2		033
1990	TL9	*	1990	10	10.84493	01	16	57.06	+13	23	22.0	18.8	033
1990	TL9		1990	10	11.86993	01	16	12.38	+13	17	11.1		033
1990	TL9		1990	10	11.91646	01	16	10.29	+13	16	55.4		033
1990	TM9	*	1990	10	10.84493	01	17	09.05	+13	56	30.3	19.3	033
1990	TM9		1990	10	11.86993	01	16	21.30	+13	52	22.7		033
1990	TM9		1990	10	11.91646	01	16	19.17	+13	52	12.7		033
1990	TN9	*	1990	10	10.84493	01	17	31.98	+12	53	12.3	18.8	033
1990	TN9		1990	10	11.86993	01	16	48.55	+12	41	26.2		033
1990	TN9		1990	10	11.91646	01	16	46.55	+12	40	54.9		033
1990	TO9	*	1990	10	10.84493	01	17	43.96	+14	59	04.3	18.4	033
1990	TO9		1990	10	11.86993	01	16	47.20	+14	53	19.1		033
1990	TO9		1990	10	11.91646	01	16	44.52	+14	53	03.8		033
1990	TP9	*	1990	10	10.84493	01	17	50.62	+15	11	38.0	19.3	033
1990	TP9		1990	10	11.86993	01	16	58.49	+15	06	36.6		033
1990	TP9		1990	10	11.91646	01	16	56.09	+15	06	22.6		033

1990	TQ9	*	1990	10	10.84493	01	18	42.66	+14	22	02.4	19.7	033
1990	TQ9		1990	10	11.86993	01	17	40.82	+14	23	25.7		033
1990	TQ9		1990	10	11.91646	01	17	37.97	+14	23	32.3		033
1990	TR9	*	1990	10	10.84493	01	18	45.83	+13	37	15.9	16.5	033
1990	TR9		1990	10	11.86993	01	17	48.27	+13	33	54.1		033
1990	TR9		1990	10	11.91646	01	17	45.58	+13	33	45.8		033
1990	TS9	*	1990	10	10.84493	01	18	59.71	+15	21	08.9	19.2	033
1990	TS9		1990	10	11.86993	01	18	04.19	+15	17	48.0		033
1990	TS9		1990	10	11.91646	01	18	01.60	+15	17	39.9		033
1990	TT9	*	1990	10	10.84493	01	18	59.99	+15	16	24.4	18.1	033
1990	TT9		1990	10	11.86993	01	18	05.16	+15	09	18.4		033
1990	TT9		1990	10	11.91646	01	18	02.58	+15	08	58.6		033
1990	TU9	*	1990	10	10.84493	01	19	03.99	+13	48	48.0	19.0	033
1990	TU9		1990	10	11.86993	01	18	07.46	+13	48	16.9		033
1990	TU9		1990	10	11.91646	01	18	04.91	+13	48	15.5		033
1990	TV9	*	1990	10	10.84493	01	19	23.99	+15	25	46.2	19.5	033
1990	TV9		1990	10	11.86993	01	18	38.08	+15	18	13.0		033
1990	TV9		1990	10	11.91646	01	18	35.87	+15	17	52.6		033
1990	TW9	*	1990	10	10.84493	01	19	24.16	+14	33	22.1	18.5	033
1990	TW9		1990	10	11.86993	01	18	22.77	+14	28	18.8		033
1990	TW9		1990	10	11.91646	01	18	19.91	+14	28	05.5		033
1990	TX9	*	1990	10	10.84493	01	20	21.42	+13	05	55.1	19.3	033
1990	TX9		1990	10	11.86993	01	19	26.16	+13	01	35.9		033
1990	TX9		1990	10	11.91646	01	19	23.62	+13	01	24.5		033
1990	TY9	*	1990	10	10.84493	01	20	30.78	+14	57	11.0	19.4	033
1990	TY9		1990	10	11.86993	01	19	26.70	+14	53	43.8		033
1990	TY9		1990	10	11.91646	01	19	23.69	+14	53	33.8		033
1990	TZ9	*	1990	10	10.84493	01	20	31.28	+13	52	03.3	20.0	033
1990	TZ9		1990	10	11.86993	01	19	46.15	+13	43	03.4		033
1990	TZ9		1990	10	11.91646	01	19	44.08	+13	42	39.0		033
1990	TA10*		1990	10	10.84493	01	20	57.62	+13	08	26.7	17.9	033
1990	TA10		1990	10	11.86993	01	20	01.29	+13	02	57.8		033
1990	TA10		1990	10	11.91646	01	19	58.69	+13	02	43.2		033
1990	TB10*		1990	10	10.84493	01	21	16.52	+13	51	23.5	19.4	033
1990	TB10		1990	10	11.86993	01	20	16.74	+13	48	15.2		033
1990	TB10		1990	10	11.91646	01	20	13.94	+13	48	06.7		033
1990	TC10*		1990	10	10.84493	01	22	08.95	+15	35	55.2	19.6	033
1990	TC10		1990	10	11.86993	01	21	15.19	+15	32	17.1		033
1990	TC10		1990	10	11.91646	01	21	12.61	+15	32	06.7		033
1990	TD10*		1990	10	10.84493	01	22	37.59	+13	37	32.8	18.7	033
1990	TD10		1990	10	11.86993	01	21	28.81	+13	36	49.4		033
1990	TD10		1990	10	11.91646	01	21	25.67	+13	36	47.1		033
1990	TE10*		1990	10	10.84493	01	22	46.07	+13	06	17.3	18.9	033
1990	TE10		1990	10	11.86993	01	21	43.56	+12	59	33.1		033
1990	TE10		1990	10	11.91646	01	21	40.70	+12	59	15.1		033
1990	TF10*		1990	10	10.84493	01	22	46.32	+14	58	57.6	18.5	033
1990	TF10		1990	10	11.86993	01	22	03.63	+14	45	33.2		033
1990	TF10		1990	10	11.91646	01	22	01.65	+14	44	56.7		033
1990	TG10*		1990	10	10.84493	01	23	24.13	+15	11	12.6	18.6	033
1990	TG10		1990	10	11.86993	01	22	33.61	+15	06	42.8		033
1990	TG10		1990	10	11.91646	01	22	31.28	+15	06	30.8		033
1990	TH10*		1990	10	10.84493	01	23	52.90	+14	27	05.8	19.7	033
1990	TH10		1990	10	11.86993	01	23	06.75	+14	20	59.5		033
1990	TH10		1990	10	11.91646	01	23	04.67	+14	20	42.8		033
1990	TJ10*		1990	10	10.84493	01	24	09.66	+14	44	40.4	19.2	033
1990	TJ10		1990	10	11.86993	01	23	15.43	+14	42	31.4		033
1990	TJ10		1990	10	11.91646	01	23	12.91	+14	42	25.5		033
1990	TK10*		1990	10	10.84493	01	24	12.62	+13	01	01.1	18.0	033
1990	TK10		1990	10	11.86993	01	23	25.04	+12	53	31.9		033

1990	TK10	1990	10	11.91646	01	23	22.86	+12	53	11.7		033
1990	TL10*	1990	10	10.84493	01	24	50.26	+13	14	22.4	18.3	033
1990	TL10	1990	10	11.86993	01	24	08.72	+13	04	40.1		033
1990	TL10	1990	10	11.91646	01	24	06.86	+13	04	13.3		033
1990	TM10*	1990	10	10.84493	01	24	55.76	+14	29	54.6	19.8	033
1990	TM10	1990	10	11.86993	01	23	58.72	+14	24	13.3		033
1990	TM10	1990	10	11.91646	01	23	56.08	+14	23	56.4		033
1990	TN10*	1990	10	10.84493	01	25	11.14	+14	44	25.1	19.1	033
1990	TN10	1990	10	11.86993	01	24	12.30	+14	41	07.1		033
1990	TN10	1990	10	11.91646	01	24	09.53	+14	40	57.8		033
1990	TO10*	1990	10	10.84493	01	25	14.42	+12	44	15.0	18.5	033
1990	TO10	1990	10	11.86993	01	24	20.97	+12	42	30.5		033
1990	TO10	1990	10	11.91646	01	24	18.44	+12	42	25.5		033
1990	TP10*	1990	10	10.84493	01	25	38.94	+13	51	58.1	19.2	033
1990	TP10	1990	10	11.86993	01	24	33.39	+13	50	41.3		033
1990	TP10	1990	10	11.91646	01	24	30.40	+13	50	38.0		033
1990	TQ10*	1990	10	10.84493	01	25	40.97	+15	26	56.0	19.4	033
1990	TQ10	1990	10	11.86993	01	24	50.48	+15	23	09.2		033
1990	TQ10	1990	10	11.91646	01	24	48.20	+15	22	58.4		033
1990	TR10*	1990	10	10.84493	01	26	15.52	+15	39	41.3	19.0	033
1990	TR10	1990	10	11.86993	01	25	14.06	+15	31	56.2		033
1990	TR10	1990	10	11.91646	01	25	11.25	+15	31	35.2		033
1990	TS10*	1990	10	10.84493	01	26	17.44	+12	40	15.1	19.0	033
1990	TS10	1990	10	11.86993	01	25	20.14	+12	35	24.4		033
1990	TS10	1990	10	11.91646	01	25	17.42	+12	35	11.6		033
1990	TT10*	1990	10	10.84493	01	26	33.45	+12	41	01.5	18.9	033
1990	TT10	1990	10	11.86993	01	25	38.22	+12	37	44.1		033
1990	TT10	1990	10	11.91646	01	25	35.67	+12	37	35.8		033
1990	TU10*	1990	10	10.84493	01	26	59.80	+15	26	47.1	17.5	033
1990	TU10	1990	10	11.86993	01	26	11.21	+15	18	57.5		033
1990	TU10	1990	10	11.91646	01	26	08.96	+15	18	36.3		033
1990	TV10*	1990	10	10.84493	01	27	05.47	+13	26	20.7	19.3	033
1990	TV10	1990	10	11.86993	01	26	05.64	+13	24	42.6		033
1990	TV10	1990	10	11.91646	01	26	02.90	+13	24	37.5		033
1990	TW10*	1990	10	10.84493	01	27	29.51	+15	03	58.1	19.9	033
1990	TW10	1990	10	11.86993	01	26	25.17	+15	02	17.4		033
1990	TW10	1990	10	11.91646	01	26	22.16	+15	02	13.1		033
1990	TX10*	1990	10	10.84493	01	27	33.71	+14	03	03.0	19.5	033
1990	TX10	1990	10	11.86993	01	26	35.83	+13	55	08.3		033
1990	TX10	1990	10	11.91646	01	26	33.19	+13	54	46.3		033
1990	TY10*	1990	10	10.84493	01	27	49.72	+15	36	34.2	19.5	033
1990	TY10	1990	10	11.86993	01	26	52.24	+15	36	16.9		033
1990	TY10	1990	10	11.91646	01	26	49.55	+15	36	16.0		033
1990	TZ10*	1990	10	10.84493	01	27	57.56	+13	35	23.8	18.4	033
1990	TZ10	1990	10	11.86993	01	27	12.64	+13	22	24.4		033
1990	TZ10	1990	10	11.91646	01	27	10.52	+13	21	49.1		033
1990	TA11*	1990	10	10.84493	01	28	00.89	+15	25	45.8	19.8	033
1990	TA11	1990	10	11.86993	01	27	00.12	+15	17	23.8		033
1990	TA11	1990	10	11.91646	01	26	57.34	+15	17	00.2		033
1990	TB11*	1990	10	10.84493	01	15	00.07	+15	45	27.2	19.4	033
1990	TB11	1990	10	11.86993	01	14	02.71	+15	41	19.3		033
1990	TB11	1990	10	11.91646	01	14	00.06	+15	41	08.5		033
1990	TC11*	1990	10	10.84493	01	15	02.16	+12	41	40.8	18.8	033
1990	TC11	1990	10	11.86993	01	14	03.01	+12	36	30.3		033
1990	TC11	1990	10	11.91646	01	14	00.21	+12	36	14.8		033
1990	TD11*	1990	10	11.82201	00	30	26.65	+06	45	24.6	19.1	033
1990	TD11	1990	10	12.82410	00	29	33.02	+06	38	43.2		033
1990	TD11	1990	10	12.86924	00	29	30.63	+06	38	24.8		033
1990	TD11	1990	10	13.85049	00	28	39.06	+06	31	50.0		033

1990	TD11	1990	10	14.84840	00	27	47.36	+06	25	13.1		033
1990	TE11*	1990	10	11.82201	00	30	35.86	+08	33	37.4	18.4	033
1990	TE11	1990	10	12.82410	00	29	52.72	+08	30	18.4		033
1990	TE11	1990	10	12.86924	00	29	50.75	+08	30	09.0		033
1990	TE11	1990	10	14.84840	00	28	28.75	+08	23	35.0		033
1990	TF11*	1990	10	11.82201	00	31	29.46	+08	42	47.9	19.1	033
1990	TF11	1990	10	12.82410	00	30	34.86	+08	37	35.3		033
1990	TF11	1990	10	12.86924	00	30	32.47	+08	37	19.7		033
1990	TF11	1990	10	13.85049	00	29	39.66	+08	32	12.0		033
1990	TF11	1990	10	14.84840	00	28	46.70	+08	26	57.7		033
1990	TG11*	1990	10	11.82201	00	31	38.73	+08	05	27.8	18.6	033
1990	TG11	1990	10	12.82410	00	30	43.95	+07	58	59.7		033
1990	TG11	1990	10	12.86924	00	30	41.52	+07	58	42.0		033
1990	TG11	1990	10	13.85049	00	29	48.74	+07	52	22.7		033
1990	TG11	1990	10	14.84840	00	28	55.72	+07	45	58.5		033
1990	TH11*	1990	10	11.82201	00	31	40.74	+07	52	40.2	18.1	033
1990	TH11	1990	10	12.82410	00	30	49.09	+07	50	41.6		033
1990	TH11	1990	10	12.86924	00	30	47.16	+07	50	37.0		033
1990	TH11	1990	10	13.85049	00	29	56.84	+07	48	41.3		033
1990	TH11	1990	10	14.84840	00	29	06.65	+07	46	43.0		033
1990	TJ11*	1990	10	11.82201	00	32	02.91	+06	34	40.8	18.3	033
1990	TJ11	1990	10	12.82410	00	31	02.62	+06	31	08.4		033
1990	TJ11	1990	10	12.86924	00	30	59.84	+06	30	58.3		033
1990	TJ11	1990	10	13.85049	00	30	01.81	+06	27	29.6		033
1990	TJ11	1990	10	14.84840	00	29	03.76	+06	24	01.3		033
1990	TK11*	1990	10	11.82201	00	32	52.38	+06	34	54.3	18.5	033
1990	TK11	1990	10	12.82410	00	32	07.78	+06	28	20.7		033
1990	TK11	1990	10	12.86924	00	32	05.71	+06	28	03.2		033
1990	TK11	1990	10	13.85049	00	31	22.91	+06	21	40.2		033
1990	TK11	1990	10	14.84840	00	30	40.23	+06	15	16.2		033
1990	TL11*	1990	10	11.82201	00	33	12.12	+07	08	28.6	18.8	033
1990	TL11	1990	10	12.82410	00	32	23.80	+07	03	07.9		033
1990	TL11	1990	10	12.86924	00	32	21.61	+07	02	53.7		033
1990	TL11	1990	10	13.85049	00	31	34.99	+06	57	40.4		033
1990	TL11	1990	10	14.84840	00	30	48.14	+06	52	23.3		033
1990	TM11*	1990	10	11.82201	00	33	18.16	+08	40	31.6	18.5	033
1990	TM11	1990	10	12.82410	00	32	17.12	+08	38	32.6		033
1990	TM11	1990	10	12.86924	00	32	14.36	+08	38	26.6		033
1990	TM11	1990	10	13.85049	00	31	15.36	+08	36	29.8		033
1990	TM11	1990	10	14.84840	00	30	16.18	+08	34	28.3		033
1990	TN11*	1990	10	11.82201	00	33	47.58	+07	03	19.9	18.7	033
1990	TN11	1990	10	12.82410	00	33	04.54	+06	55	53.2		033
1990	TN11	1990	10	12.86924	00	33	02.64	+06	55	33.0		033
1990	TN11	1990	10	13.85049	00	32	21.29	+06	48	17.2		033
1990	TN11	1990	10	14.84840	00	31	39.84	+06	40	55.4		033
1990	TO11*	1990	10	11.82201	00	34	21.29	+06	33	11.1	18.8	033
1990	TO11	1990	10	12.82410	00	33	32.76	+06	28	32.9		033
1990	TO11	1990	10	12.86924	00	33	30.53	+06	28	20.9		033
1990	TO11	1990	10	13.85049	00	32	43.72	+06	23	50.0		033
1990	TO11	1990	10	14.84840	00	31	56.54	+06	19	17.2		033
1990	TP11*	1990	10	11.82201	00	34	50.93	+07	50	28.0	18.9	033
1990	TP11	1990	10	12.82410	00	34	07.93	+07	44	51.2		033
1990	TP11	1990	10	12.86924	00	34	06.00	+07	44	36.3		033
1990	TP11	1990	10	13.85049	00	33	24.42	+07	39	08.8		033
1990	TP11	1990	10	14.84840	00	32	42.30	+07	33	34.5		033
1990	TQ11*	1990	10	11.82201	00	34	54.28	+06	06	55.7	19.3	033
1990	TQ11	1990	10	12.82410	00	34	02.66	+05	59	16.9		033
1990	TQ11	1990	10	12.86924	00	34	00.36	+05	58	55.8		033
1990	TQ11	1990	10	13.85049	00	33	10.02	+05	51	24.2		033

1990	TR11*	1990	10	11.82201	00	35	50.54	+08	14	04.9	18.6	033
1990	TR11	1990	10	12.82410	00	35	05.41	+08	09	39.7		033
1990	TR11	1990	10	12.86924	00	35	03.31	+08	09	28.1		033
1990	TR11	1990	10	13.85049	00	34	19.94	+08	05	09.2		033
1990	TR11	1990	10	14.84840	00	33	36.20	+08	00	44.8		033
1990	TS11*	1990	10	11.82201	00	35	51.04	+06	41	29.3	19.4	033
1990	TS11	1990	10	12.82410	00	35	01.11	+06	34	51.5		033
1990	TS11	1990	10	12.86924	00	34	58.78	+06	34	34.8		033
1990	TS11	1990	10	13.85049	00	34	10.70	+06	28	09.1		033
1990	TS11	1990	10	14.84840	00	33	22.69	+06	21	41.5		033
1990	TT11*	1990	10	11.82201	00	36	00.64	+08	31	14.6	18.0	033
1990	TT11	1990	10	12.82410	00	34	59.61	+08	29	12.1		033
1990	TT11	1990	10	12.86924	00	34	56.83	+08	29	07.0		033
1990	TT11	1990	10	13.85049	00	33	57.98	+08	27	07.8		033
1990	TT11	1990	10	14.84840	00	32	58.84	+08	25	04.7		033
1990	TU11*	1990	10	11.82201	00	36	03.46	+06	29	26.5	18.5	033
1990	TU11	1990	10	12.82410	00	35	07.22	+06	24	16.3		033
1990	TU11	1990	10	12.86924	00	35	04.66	+06	24	03.1		033
1990	TU11	1990	10	13.85049	00	34	10.16	+06	18	59.6		033
1990	TU11	1990	10	14.84840	00	33	15.09	+06	13	53.1		033
1990	TV11*	1990	10	11.82201	00	36	54.20	+06	55	29.3	17.9	033
1990	TV11	1990	10	12.82410	00	36	03.39	+06	50	13.3		033
1990	TV11	1990	10	12.86924	00	36	01.04	+06	49	59.3		033
1990	TV11	1990	10	13.85049	00	35	12.10	+06	44	51.3		033
1990	TV11	1990	10	14.84840	00	34	22.93	+06	39	41.0		033
1990	TW11*	1990	10	11.82201	00	37	15.16	+06	29	24.7	18.1	033
1990	TW11	1990	10	12.82410	00	36	23.79	+06	25	32.3		033
1990	TW11	1990	10	12.86924	00	36	21.44	+06	25	22.1		033
1990	TW11	1990	10	13.85049	00	35	31.65	+06	21	34.6		033
1990	TW11	1990	10	14.84840	00	34	41.57	+06	17	45.4		033
1990	TX11*	1990	10	11.82201	00	37	36.00	+07	50	01.2	17.6	033
1990	TX11	1990	10	12.82410	00	36	44.67	+07	44	20.3		033
1990	TX11	1990	10	12.86924	00	36	42.32	+07	44	04.5		033
1990	TX11	1990	10	13.85049	00	35	52.86	+07	38	31.1		033
1990	TX11	1990	10	14.84840	00	35	02.91	+07	32	50.5		033
1990	TY11*	1990	10	11.82201	00	38	51.98	+06	57	58.8	18.3	033
1990	TY11	1990	10	12.82410	00	37	52.05	+06	55	37.1		033
1990	TY11	1990	10	12.86924	00	37	49.26	+06	55	30.5		033
1990	TY11	1990	10	13.85049	00	36	51.36	+06	53	11.9		033
1990	TY11	1990	10	14.84840	00	35	52.96	+06	50	52.1		033
1990	TZ11*	1990	10	11.82201	00	39	03.07	+08	27	48.1	18.7	033
1990	TZ11	1990	10	12.82410	00	38	25.26	+08	23	00.2		033
1990	TZ11	1990	10	12.86924	00	38	23.55	+08	22	47.5		033
1990	TZ11	1990	10	13.85049	00	37	47.28	+08	18	06.8		033
1990	TZ11	1990	10	14.84840	00	37	10.53	+08	13	20.7		033
1990	TA12*	1990	10	11.82201	00	39	06.75	+07	51	58.3	18.9	033
1990	TA12	1990	10	12.82410	00	38	17.38	+07	49	20.1		033
1990	TA12	1990	10	12.86924	00	38	15.12	+07	49	13.5		033
1990	TA12	1990	10	13.85049	00	37	28.06	+07	46	38.0		033
1990	TA12	1990	10	14.84840	00	36	40.88	+07	44	00.7		033
1990	TB12*	1990	10	11.82201	00	39	17.23	+07	13	07.2	17.9	033
1990	TB12	1990	10	12.82410	00	38	37.68	+07	09	03.3		033
1990	TB12	1990	10	12.86924	00	38	35.89	+07	08	52.2		033
1990	TB12	1990	10	13.85049	00	37	57.58	+07	04	55.1		033
1990	TB12	1990	10	14.84840	00	37	18.78	+07	00	54.4		033
1990	TC12*	1990	10	11.82201	00	39	17.62	+07	14	33.0	19.0	033
1990	TC12	1990	10	12.82410	00	38	15.84	+07	13	14.7		033
1990	TC12	1990	10	12.86924	00	38	13.07	+07	13	11.2		033
1990	TC12	1990	10	13.85049	00	37	13.41	+07	11	54.7		033

1990	TC12	1990	10	14.84840	00	36	13.36	+07	10	35.9		033
1990	TD12*	1990	10	11.82201	00	39	28.46	+08	55	39.0	17.8	033
1990	TD12	1990	10	12.82410	00	38	39.17	+08	49	19.5		033
1990	TD12	1990	10	12.86924	00	38	36.93	+08	49	02.5		033
1990	TD12	1990	10	13.85049	00	37	49.27	+08	42	49.0		033
1990	TD12	1990	10	14.84840	00	37	01.15	+08	36	28.3		033
1990	TE12*	1990	10	11.82201	00	41	20.83	+07	49	30.6	19.2	033
1990	TE12	1990	10	12.82410	00	40	39.24	+07	43	21.5		033
1990	TE12	1990	10	12.86924	00	40	37.39	+07	43	05.7		033
1990	TE12	1990	10	13.85049	00	39	57.28	+07	37	03.7		033
1990	TE12	1990	10	14.84840	00	39	16.86	+07	30	57.9		033
1990	TF12*	1990	10	11.82201	00	41	37.93	+08	52	39.6	17.7	033
1990	TF12	1990	10	12.82410	00	40	34.89	+08	54	36.2		033
1990	TF12	1990	10	12.86924	00	40	31.94	+08	54	41.4		033
1990	TF12	1990	10	13.85049	00	39	30.97	+08	56	31.5		033
1990	TF12	1990	10	14.84840	00	38	29.64	+08	58	22.8		033
1990	TG12*	1990	10	11.82201	00	41	46.77	+06	42	07.0	19.0	033
1990	TG12	1990	10	12.82410	00	40	52.58	+06	35	10.4		033
1990	TG12	1990	10	12.86924	00	40	50.07	+06	34	51.6		033
1990	TG12	1990	10	13.85049	00	39	57.24	+06	28	04.8		033
1990	TG12	1990	10	14.84840	00	39	04.09	+06	21	15.0		033
1990	TH12*	1990	10	14.03035	04	13	14.44	+23	15	22.0	18.1	033
1990	TH12	1990	10	15.01368	04	13	09.06	+23	13	52.5		033
1990	TH12	1990	10	15.06160	04	13	08.66	+23	13	48.0		033
1990	TH12	1990	10	18.12826	04	12	38.18	+23	08	19.0		033
1990	TH12	1990	10	18.16021	04	12	37.63	+23	08	15.4		033
1990	TJ12*	1990	10	14.03035	04	13	52.30	+22	40	29.0	19.1	033
1990	TJ12	1990	10	15.01368	04	13	33.40	+22	39	58.6		033
1990	TJ12	1990	10	15.06160	04	13	32.37	+22	39	57.7		033
1990	TJ12	1990	10	18.12826	04	12	23.86	+22	37	55.9		033
1990	TJ12	1990	10	18.16021	04	12	22.99	+22	37	55.7		033
1990	TK12*	1990	10	14.03035	04	13	59.51	+25	42	26.2	19.0	033
1990	TK12	1990	10	15.01368	04	13	41.86	+25	44	02.0		033
1990	TK12	1990	10	15.06160	04	13	40.81	+25	44	06.4		033
1990	TL12*	1990	10	14.03035	04	14	04.15	+24	54	52.0	19.3	033
1990	TL12	1990	10	15.01368	04	13	57.71	+24	54	17.7		033
1990	TL12	1990	10	15.06160	04	13	57.30	+24	54	15.3		033
1990	TL12	1990	10	18.12826	04	13	22.04	+24	51	34.5		033
1990	TL12	1990	10	18.16021	04	13	21.39	+24	51	31.3		033
1990	TM12*	1990	10	14.03035	04	14	04.67	+23	40	33.0	19.6	033
1990	TM12	1990	10	15.01368	04	13	42.82	+23	40	38.4		033
1990	TM12	1990	10	15.06160	04	13	41.71	+23	40	38.4		P 033
1990	TM12	1990	10	18.12826	04	12	23.44	+23	40	23.1		P 033
1990	TM12	1990	10	18.16021	04	12	22.54	+23	40	23.8		P 033
1990	TN12*	1990	10	14.03035	04	14	26.60	+25	18	43.5	18.6	033
1990	TN12	1990	10	15.01368	04	14	12.63	+25	20	04.3		033
1990	TN12	1990	10	15.06160	04	14	11.81	+25	20	08.4		033
1990	TN12	1990	10	18.12826	04	13	12.90	+25	23	36.7		033
1990	TN12	1990	10	18.16021	04	13	12.09	+25	23	38.0		033
1990	TO12*	1990	10	14.03035	04	15	15.74	+24	04	22.8	19.2	033
1990	TO12	1990	10	15.01368	04	15	04.47	+24	05	26.2		033
1990	TO12	1990	10	15.06160	04	15	03.89	+24	05	28.8		033
1990	TO12	1990	10	18.12826	04	14	16.35	+24	08	07.6		033
1990	TO12	1990	10	18.16021	04	14	15.60	+24	08	08.6		033
1990	TP12*	1990	10	14.03035	04	15	37.41	+24	54	37.1	19.5	033
1990	TP12	1990	10	15.01368	04	15	18.78	+24	56	10.5		033
1990	TP12	1990	10	15.06160	04	15	17.88	+24	56	14.9		033
1990	TP12	1990	10	18.12826	04	14	14.76	+25	00	50.6		033
1990	TP12	1990	10	18.16021	04	14	13.97	+25	00	53.3		033

1990	TQ12*	1990	10	14.03035	04	17	37.66	+25	42	44.9	17.8	033
1990	TQ12	1990	10	15.01368	04	17	51.85	+25	42	02.1		033
1990	TQ12	1990	10	15.06160	04	17	52.34	+25	42	00.0		033
1990	TQ12	1990	10	18.12826	04	18	20.83	+25	38	44.9		033
1990	TQ12	1990	10	18.16021	04	18	20.92	+25	38	41.8		033
1990	TR12*	1990	10	14.03035	04	18	03.40	+23	06	52.8	18.4	033
1990	TR12	1990	10	15.01368	04	17	46.35	+23	04	06.1		033
1990	TR12	1990	10	15.06160	04	17	45.43	+23	03	57.7		033
1990	TR12	1990	10	18.12826	04	16	42.42	+22	54	38.9		033
1990	TR12	1990	10	18.16021	04	16	41.57	+22	54	33.2		033
1990	TS12*	1990	10	14.03035	04	18	29.78	+25	20	18.5	18.8	033
1990	TS12	1990	10	15.01368	04	18	09.44	+25	19	40.5		033
1990	TS12	1990	10	15.06160	04	18	08.34	+25	19	37.8		033
1990	TS12	1990	10	18.12826	04	16	50.73	+25	16	43.1		033
1990	TS12	1990	10	18.16021	04	16	49.71	+25	16	46.1		033
1990	TT12*	1990	10	14.03035	04	18	58.28	+23	06	26.9	18.3	033
1990	TT12	1990	10	15.01368	04	18	41.00	+23	06	30.3		033
1990	TT12	1990	10	15.06160	04	18	40.07	+23	06	29.8		033
1990	TT12	1990	10	18.12826	04	17	35.84	+23	06	09.7		033
1990	TT12	1990	10	18.16021	04	17	34.99	+23	06	09.6		033
1990	TU12*	1990	10	14.03035	04	19	37.78	+24	23	02.7	19.7	033
1990	TU12	1990	10	15.01368	04	19	22.78	+24	23	55.1		033
1990	TU12	1990	10	15.06160	04	19	21.96	+24	23	57.1		033
1990	TU12	1990	10	18.12826	04	18	23.08	+24	26	05.6		033
1990	TU12	1990	10	18.16021	04	18	22.39	+24	26	08.5		033
1990	TV12*	1990	10	14.03035	04	20	58.57	+23	08	53.7	18.9	033
1990	TV12	1990	10	15.01368	04	20	43.22	+23	05	58.5		033
1990	TV12	1990	10	15.06160	04	20	42.40	+23	05	49.8		033
1990	TV12	1990	10	18.12826	04	19	49.45	+22	56	22.0		033
1990	TV12	1990	10	18.16021	04	19	48.76	+22	56	16.1		033
1990	TW12*	1990	10	14.03035	04	21	09.98	+25	15	23.5	18.5	033
1990	TW12	1990	10	15.01368	04	21	00.51	+25	23	21.6		033
1990	TW12	1990	10	15.06160	04	20	59.90	+25	23	44.4		033
1990	TX12*	1990	10	14.03035	04	22	16.89	+23	07	38.3	17.7	033
1990	TX12	1990	10	15.01368	04	22	07.16	+23	04	39.6		033
1990	TX12	1990	10	15.06160	04	22	06.60	+23	04	31.1		033
1990	TX12	1990	10	18.12826	04	21	25.72	+22	54	35.3		033
1990	TX12	1990	10	18.16021	04	21	25.05	+22	54	28.0		033
1990	TY12*	1990	10	14.03035	04	22	18.90	+25	34	29.1	18.0	033
1990	TY12	1990	10	15.01368	04	21	55.09	+25	40	11.7		033
1990	TY12	1990	10	15.06160	04	21	53.80	+25	40	28.7		033
1990	TZ12*	1990	10	14.03035	04	22	18.96	+25	33	53.9	18.3	033
1990	TZ12	1990	10	15.01368	04	21	56.54	+25	35	51.5		033
1990	TZ12	1990	10	15.06160	04	21	55.25	+25	35	57.5		033
1990	TZ12	1990	10	18.12826	04	20	28.41	+25	41	17.6		033
1990	TZ12	1990	10	18.16021	04	20	27.29	+25	41	20.7		033
1990	TA13*	1990	10	14.03035	04	22	44.49	+25	27	21.1	18.2	033
1990	TA13	1990	10	15.01368	04	22	27.65	+25	30	33.8		033
1990	TA13	1990	10	15.06160	04	22	26.69	+25	30	42.6		033
1990	TA13	1990	10	18.12826	04	21	23.68	+25	40	24.2		033
1990	TA13	1990	10	18.16021	04	21	22.93	+25	40	29.6		033
1990	TB13*	1990	10	12.94771	01	19	13.06	-07	29	49.4	18.5	033
1990	TB13	1990	10	12.98938	01	19	11.16	-07	30	03.3		033
1990	TB13	1990	10	13.96229	01	18	27.34	-07	35	31.2		033
1990	TC13*	1990	10	12.94771	01	19	22.30	-08	38	34.6	19.0	033
1990	TC13	1990	10	12.98938	01	19	19.97	-08	38	41.1		033
1990	TC13	1990	10	13.96229	01	18	32.04	-08	40	25.7		033
1990	TD13*	1990	10	12.94771	01	21	36.62	-08	01	31.3	19.1	033
1990	TD13	1990	10	12.98938	01	21	34.72	-08	01	37.6		033

1990 TD13	1990 10	13.96229	01 20	49.41	-08 04	31.2		033
1990 TE13*	1990 10	12.94771	01 24	34.11	-07 10	44.6	18.7	033
1990 TE13	1990 10	12.98938	01 24	32.00	-07 10	47.7		033
1990 TE13	1990 10	13.96229	01 23	42.10	-07 12	24.0		033
1990 TF13*	1990 10	12.94771	01 25	18.81	-06 09	22.4	18.4	033
1990 TF13	1990 10	12.98938	01 25	16.71	-06 09	32.6		033
1990 TF13	1990 10	13.96229	01 24	26.82	-06 13	14.0		033
1990 TG13*	1990 10	12.94771	01 25	43.12	-07 40	49.4	18.2	033
1990 TG13	1990 10	12.98938	01 25	40.50	-07 40	52.2		033
1990 TG13	1990 10	13.96229	01 24	38.44	-07 42	29.2		033
1990 TH13*	1990 10	12.94771	01 27	48.02	-07 18	52.1	18.0	033
1990 TH13	1990 10	12.98938	01 27	46.06	-07 18	57.8		033
1990 TH13	1990 10	13.96229	01 26	58.11	-07 21	47.2		033
1990 TJ13*	1990 10	12.94771	01 29	00.67	-08 23	39.7	18.3	033
1990 TJ13	1990 10	12.98938	01 28	58.72	-08 23	52.5		033
1990 TJ13	1990 10	13.96229	01 28	12.78	-08 29	29.8		033
1990 TK13*	1990 10	12.94771	01 29	03.09	-08 33	35.6	18.5	033
1990 TK13	1990 10	12.98938	01 29	01.12	-08 33	45.3		033
1990 TK13	1990 10	13.96229	01 28	14.99	-08 37	18.7		033
1990 TL13*	1990 10	12.94771	01 31	05.42	-07 56	23.8	19.5	033
1990 TL13	1990 10	13.96229	01 30	06.82	-08 02	09.4		033
1990 TM13*	1990 10	12.94771	01 32	00.24	-08 36	13.8	18.6	033
1990 TM13	1990 10	12.98938	01 31	57.08	-08 35	59.8		033
1990 TM13	1990 10	13.96229	01 30	47.18	-08 29	56.2		033
1990 UH	1990 10	11.94019	02 01	47.13	+12 44	10.4		033
1990 UH	1990 10	12.92063	02 00	57.86	+12 35	24.4	17.6	033
1990 UH	1990 10	12.96924	02 00	55.30	+12 34	58.2		033
1990 UC1	1990 10	11.86993	01 17	32.50	+12 31	09.1	17.6	033
1990 UC1	1990 10	11.91646	01 17	29.23	+12 31	10.0		033
1990 UC2	1990 10	12.94771	01 26	09.54	-08 13	26.6	18.1	033
1990 UC2	1990 10	12.98938	01 26	07.14	-08 13	30.6		033
1990 UC2	1990 10	13.96229	01 25	11.42	-08 15	15.5		033
1990 UC2	1990 10	14.96646	01 24	13.79	-08 16	49.7		033
1990 UE3	1990 10	14.03035	04 17	20.53	+23 29	31.3	17.4	033
1990 UE3	1990 10	15.01368	04 17	15.40	+23 31	41.1		033
1990 UE3	1990 10	15.06160	04 17	15.06	+23 31	47.0		033
1990 UE3	1990 10	18.12826	04 16	47.42	+23 38	04.4		033
1990 UE3	1990 10	18.16021	04 16	46.94	+23 38	08.2		033
1990 UF3	1990 10	14.03035	04 22	03.43	+23 07	35.1	17.9	033
1990 UF3	1990 10	15.01368	04 21	48.42	+23 09	37.8		033
1990 UF3	1990 10	15.06160	04 21	47.54	+23 09	43.5		033
1990 UF3	1990 10	18.12826	04 20	47.22	+23 15	40.6		033
1990 UF3	1990 10	18.16021	04 20	46.33	+23 15	43.7		033
1990 VB1	1990 10	14.03035	04 22	50.44	+23 21	55.9	18.1	033
1990 VB1	1990 10	15.01368	04 22	34.64	+23 21	57.0		033
1990 VB1	1990 10	15.06160	04 22	33.78	+23 21	57.0		033
1990 VB1	1990 10	18.12826	04 21	33.95	+23 21	33.7		033
1990 VB1	1990 10	18.16021	04 21	33.14	+23 21	31.8		033
1990 VA3	1990 10	14.03035	04 12	39.54	+24 09	17.7	17.6	033
1990 VA3	1990 10	15.01368	04 12	22.88	+24 10	07.6		033
1990 VA3	1990 10	15.06160	04 12	21.92	+24 10	09.7		033
1990 VA3	1990 10	18.12826	04 11	13.84	+24 11	56.1		033
1990 VA3	1990 10	18.16021	04 11	12.92	+24 11	56.2		033
1990 WC	1990 10	12.94771	01 19	41.65	-08 15	02.0	16.6	033
1990 WC	1990 10	12.98938	01 19	39.19	-08 15	04.6		033
1990 WC	1990 10	13.96229	01 18	44.80	-08 15	40.7		033
1990 WC	1990 10	14.96646	01 17	48.39	-08 16	04.0		033
139	1990 10	11.82201	00 41	14.26	+08 17	07.3	13.3	033
139	1990 10	12.82410	00 40	21.02	+08 14	09.0		033

139	1990	10	12.86924	00	40	18.57	+08	14	00.6	033
139	1990	10	13.85049	00	39	26.88	+08	11	05.2	033
139	1990	10	14.84840	00	38	34.50	+08	08	05.8	033
142	1990	10	14.03035	04	18	09.52	+24	06	37.1	15.4 033
142	1990	10	15.01368	04	17	49.06	+24	06	18.4	033
142	1990	10	15.06160	04	17	48.00	+24	06	16.5	033
142	1990	10	18.12826	04	16	32.76	+24	04	38.2	033
142	1990	10	18.16021	04	16	31.83	+24	04	37.0	033
409	1990	10	14.03035	04	15	53.71	+24	19	11.8	13.0 033
409	1990	10	15.01368	04	15	35.30	+24	16	00.6	033
409	1990	10	15.06160	04	15	34.35	+24	15	50.6	033
409	1990	10	18.12826	04	14	25.88	+24	05	04.3	033
409	1990	10	18.16021	04	14	25.04	+24	04	57.6	033
847	1990	10	14.03035	04	21	06.02	+23	51	25.2	15.3 033
847	1990	10	15.01368	04	20	56.18	+23	51	03.2	033
847	1990	10	15.06160	04	20	55.60	+23	51	01.3	033
847	1990	10	18.12826	04	20	12.91	+23	49	14.7	033
847	1990	10	18.16021	04	20	12.28	+23	49	13.1	033
1099	1990	10	11.94019	02	08	08.68	+14	43	33.8	033
1099	1990	10	12.92063	02	07	16.58	+14	45	47.0	14.2 033
1099	1990	10	12.96924	02	07	13.84	+14	45	53.6	033
1099	1990	10	13.91715	02	06	22.64	+14	47	57.0	033
1099	1990	10	14.91854	02	05	27.66	+14	50	02.6	033
1099	1990	10	18.08382	02	02	29.18	+14	56	04.6	033
1358	1990	10	11.94019	02	11	25.84	+13	41	33.0	033
1358	1990	10	12.92063	02	10	31.82	+13	38	03.0	16.3 033
1358	1990	10	12.96924	02	10	29.00	+13	37	52.7	033
1358	1990	10	13.91715	02	09	35.98	+13	34	25.2	033
1358	1990	10	14.91854	02	08	39.04	+13	30	40.9	033
1358	1990	10	18.08382	02	05	34.86	+13	18	21.5	033
1835	1990	10	14.03035	04	18	54.77	+22	43	19.1	17.0 033
1835	1990	10	15.01368	04	18	41.40	+22	43	02.1	033
1835	1990	10	15.06160	04	18	40.63	+22	43	01.5	033
1835	1990	10	18.12826	04	17	47.71	+22	41	36.7	033
1835	1990	10	18.16021	04	17	46.95	+22	41	35.7	033
2200	1990	10	11.82201	00	36	09.22	+07	37	31.3	17.4 033
2200	1990	10	12.82410	00	35	12.87	+07	32	43.6	033
2200	1990	10	12.86924	00	35	10.31	+07	32	30.4	033
2200	1990	10	13.85049	00	34	15.87	+07	27	49.4	033
2200	1990	10	14.84840	00	33	20.80	+07	23	03.6	033
2296	1990	10	13.94007	02	46	55.35	+15	56	34.4	17.4 033
2296	1990	10	13.98451	02	46	53.63	+15	56	27.4	033
2296	1990	10	14.94285	02	46	16.66	+15	53	58.2	033
2296	1990	10	18.10604	02	44	08.85	+15	45	16.4	033
2514	1990	10	11.94019	02	13	03.69	+15	29	32.1	033
2514	1990	10	12.92063	02	12	15.80	+15	26	46.9	17.4 033
2514	1990	10	12.96924	02	12	13.25	+15	26	38.5	033
2514	1990	10	13.91715	02	11	26.12	+15	23	52.2	033
2514	1990	10	14.91854	02	10	35.19	+15	20	50.3	033
2514	1990	10	18.08382	02	07	49.29	+15	10	34.5	033
2591	1990	10	11.94019	02	07	16.59	+14	11	58.7	033
2591	1990	10	12.92063	02	06	31.60	+14	08	34.6	16.9 033
2591	1990	10	12.96924	02	06	29.24	+14	08	24.9	033
2591	1990	10	13.91715	02	05	45.09	+14	05	02.9	033
2591	1990	10	14.91854	02	04	57.82	+14	01	25.5	033
2591	1990	10	18.08382	02	02	25.09	+13	49	33.4	033
2635	1990	10	10.84493	01	15	43.19	+15	27	03.8	17.0 033
2635	1990	10	11.86993	01	14	41.05	+15	20	46.5	033
2635	1990	10	11.91646	01	14	38.18	+15	20	29.6	033

2654	1990	10	11.82201	00	32	08.44	+06	21	03.0	18.2	033
2654	1990	10	12.82410	00	31	27.08	+06	14	30.4		033
2654	1990	10	12.86924	00	31	25.15	+06	14	12.9		033
2654	1990	10	13.85049	00	30	45.12	+06	07	47.3		033
2654	1990	10	14.84840	00	30	04.85	+06	01	19.8		033
2777	1990	10	13.94007	02	43	30.86	+15	24	30.5	17.3	033
2777	1990	10	13.98451	02	43	28.62	+15	24	26.4		033
2777	1990	10	14.94285	02	42	40.85	+15	23	00.6		033
2777	1990	10	18.10604	02	39	54.07	+15	17	39.3		033
2823	1990	10	10.84493	01	21	57.26	+14	10	57.0	16.9	033
2823	1990	10	11.86993	01	21	02.62	+14	04	10.9		033
2823	1990	10	11.91646	01	21	00.09	+14	03	52.3		033
2957	1990	10	14.03035	04	16	37.60	+24	42	48.4	16.6	033
2957	1990	10	15.01368	04	16	19.38	+24	40	51.2		033
2957	1990	10	15.06160	04	16	18.44	+24	40	44.7		033
2957	1990	10	18.12826	04	15	12.03	+24	33	58.6		033
2957	1990	10	18.16021	04	15	11.27	+24	33	54.0		033
3013	1990	10	11.94019	02	10	21.20	+15	36	53.4		033
3013	1990	10	12.92063	02	09	28.65	+15	34	51.3	17.5	033
3013	1990	10	12.96924	02	09	25.84	+15	34	45.1		033
3013	1990	10	13.91715	02	08	33.93	+15	32	39.4		033
3013	1990	10	14.91854	02	07	37.81	+15	30	18.3		033
3013	1990	10	18.08382	02	04	33.53	+15	22	05.2		033
3148	1990	10	11.94019	02	06	36.28	+13	23	43.1		033
3148	1990	10	12.92063	02	05	54.52	+13	20	25.8	16.8	033
3148	1990	10	12.96924	02	05	52.31	+13	20	15.7		033
3148	1990	10	13.91715	02	05	11.20	+13	16	59.7		033
3148	1990	10	14.91854	02	04	26.90	+13	13	29.1		033
3148	1990	10	18.08382	02	02	02.69	+13	01	53.2		033
3396	1990	10	14.03035	04	18	17.59	+24	17	31.3	16.5	033
3396	1990	10	15.01368	04	17	59.15	+24	19	56.2		033
3396	1990	10	15.06160	04	17	58.18	+24	20	02.1		033
3396	1990	10	18.12826	04	16	50.35	+24	27	04.5		033
3396	1990	10	18.16021	04	16	49.52	+24	27	08.9		033
3486	1990	10	13.94007	02	44	34.52	+14	18	34.7	16.9	033
3486	1990	10	13.98451	02	44	32.67	+14	18	31.4		033
3486	1990	10	14.94285	02	43	53.08	+14	17	21.3		033
3486	1990	10	18.10604	02	41	31.28	+14	12	52.6		033
3547	1990	10	14.03035	04	16	20.25	+25	35	52.1	18.2	033
3547	1990	10	15.01368	04	16	09.26	+25	35	39.8		033
3547	1990	10	15.06160	04	16	08.57	+25	35	39.2		033
3547	1990	10	18.12826	04	15	21.24	+25	34	16.4		033
3547	1990	10	18.16021	04	15	20.57	+25	34	15.0		033
4061	1990	10	13.94007	02	46	16.20	+16	36	54.2	18.1	033
4061	1990	10	13.98451	02	46	14.35	+16	36	47.9		033
4061	1990	10	14.94285	02	45	35.03	+16	34	17.6		033
4061	1990	10	18.10604	02	43	20.04	+16	25	33.2		033
4239	1990	10	14.03035	04	22	36.76	+23	28	37.0	18.4	033
4239	1990	10	15.01368	04	22	18.41	+23	28	19.8		033
4239	1990	10	15.06160	04	22	17.38	+23	28	18.9		033
4239	1990	10	18.12826	04	21	04.90	+23	26	41.5		033
4239	1990	10	18.16021	04	21	03.86	+23	26	38.6		033

046 Klet

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1979 OB9	1990	10	15.81620	00	39	37.35	+07	13	25.7		046
1979 OB9	1990	10	15.82894	00	39	36.73	+07	13	16.3		046

1979	OB9	1990	10	16.81429	00	38	55.24	+07	03	58.1		046
1979	OB9	1990	10	16.82708	00	38	54.73	+07	03	52.8		046
1979	SX2	1990	10	24.89416	01	45	26.96	+15	02	33.6		046
1979	SX2	1990	10	24.90833	01	45	26.17	+15	02	27.4		046
1979	SJ11	1990	10	24.89416	01	39	25.60	+15	47	36.5		046
1979	SJ11	1990	10	24.90833	01	39	24.85	+15	47	32.0		046
1982	UD7	1990	10	13.84236	01	09	28.39	+08	25	48.6		046
1982	UD7	1990	10	14.82361	01	08	44.11	+08	16	11.4		046
1982	UD7	1990	10	14.83634	01	08	43.70	+08	16	06.4		046
1984	SM1	1990	10	12.89861	01	19	47.14	+20	55	00.8		046
1984	SM1	1990	10	12.91134	01	19	46.46	+20	54	59.3		046
1984	SM1	1990	10	13.85972	01	18	54.28	+20	54	15.0		046
1984	SM1	1990	10	13.87257	01	18	53.50	+20	54	14.4		046
1986	XH	1990	10	13.92025	02	21	39.79	+30	16	46.3		046
1986	XH	1990	10	13.93299	02	21	39.01	+30	16	43.4		046
1986	XH	1990	10	15.91042	02	20	05.19	+30	08	56.9		046
1986	XH	1990	10	15.92315	02	20	04.45	+30	08	54.7		046
1988	AK1	1990	10	24.92905	01	51	20.70	+17	30	19.8		046
1988	AK1	1990	10	24.94317	01	51	19.86	+17	30	15.5		046
1989	GT3	1990	10	13.82951	01	06	58.22	+08	58	57.8		046
1989	GT3	1990	10	13.84236	01	06	57.42	+08	58	51.8		046
1989	GT3	1990	10	14.82361	01	06	03.06	+08	52	54.3		046
1989	GT3	1990	10	14.83634	01	06	02.29	+08	52	49.6		046
1990	SN1	1990	10	15.81620	00	35	30.27	+08	26	59.1	16.8	046
1990	SN1	1990	10	15.82894	00	35	29.55	+08	26	52.3		046
1990	SN1	1990	10	16.81429	00	34	43.77	+08	18	03.3		046
1990	SN1	1990	10	16.82708	00	34	43.19	+08	17	57.1		046
1990	SN4	1990	10	12.92882	01	36	12.82	+21	55	43.1	16.7	046
1990	SN4	1990	10	12.94236	01	36	12.20	+21	55	44.8		046
1990	SN4	1990	10	13.88993	01	35	09.69	+21	57	18.4		046
1990	SN4	1990	10	13.90278	01	35	08.86	+21	57	19.4		046
1990	SN4	1990	10	16.84815	01	31	51.33	+22	01	00.9		046
1990	SN4	1990	10	16.86094	01	31	50.60	+22	01	01.6		046
1990	TG3	1990	10	14.88657	01	22	48.51	+09	47	53.5	16.6	046
1990	TG3	1990	10	14.89931	01	22	47.89	+09	47	45.2		046
1990	TG3	1990	10	15.87905	01	21	59.08	+09	37	35.3		046
1990	TG3	1990	10	15.89178	01	21	58.41	+09	37	26.2		046
1990	TL8	* 1990	10	12.89861	01	18	31.86	+21	42	59.3	16.8	046
1990	TL8	1990	10	12.91134	01	18	31.19	+21	42	55.5		046
1990	TL8	1990	10	13.85972	01	17	48.67	+21	37	28.3		046
1990	TL8	1990	10	13.87257	01	17	48.29	+21	37	25.6		046
1990	TM8	* 1990	10	13.82951	01	09	32.63	+09	28	48.8	16.7	046
1990	TM8	1990	10	13.84236	01	09	31.93	+09	28	43.0		046
1990	TM8	1990	10	14.82361	01	08	43.96	+09	18	39.5		046
1990	TM8	1990	10	14.83634	01	08	43.46	+09	18	35.6		046
1990	TN8	* 1990	10	14.85486	01	03	35.43	+05	15	33.7		046
1990	TN8	1990	10	14.86771	01	03	34.88	+05	15	30.1		046
1990	TN8	1990	10	15.84832	01	02	53.20	+05	09	09.0		046
1990	TN8	1990	10	15.86111	01	02	52.69	+05	09	02.1		046
1990	TO8	* 1990	10	14.85486	01	05	43.16	+03	00	32.1	16.7	046
1990	TO8	1990	10	14.86771	01	05	42.87	+03	00	28.3		046
1990	TO8	1990	10	15.84832	01	04	59.73	+02	56	03.4		046
1990	TO8	1990	10	15.86111	01	04	58.92	+02	56	00.5		046
1990	TP8	* 1990	10	14.85486	01	08	59.03	+02	59	58.1	16.8	046
1990	TP8	1990	10	14.86771	01	08	58.35	+02	59	53.8		046
1990	TP8	1990	10	15.84832	01	08	10.07	+02	53	14.8		046
1990	TP8	1990	10	15.86111	01	08	09.63	+02	53	10.9		046
1990	TQ8	* 1990	10	14.88657	01	16	12.62	+07	59	12.7	16.5	046
1990	TQ8	1990	10	14.89931	01	16	12.03	+07	59	09.5		046

1990	TQ8	1990	10	15.87905	01	15	26.39	+07	54	50.9		046
1990	TQ8	1990	10	15.89178	01	15	25.71	+07	54	46.9		046
1990	TR8	* 1990	10	14.88657	01	16	45.12	+09	39	41.0	16.9	046
1990	TR8	1990	10	14.89931	01	16	44.63	+09	39	39.2		046
1990	TR8	1990	10	15.87905	01	15	52.38	+09	36	02.3		046
1990	TR8	1990	10	15.89178	01	15	51.57	+09	35	59.2		046
1990	TS8	* 1990	10	14.88657	01	18	29.58	+08	41	17.2	16.7	046
1990	TS8	1990	10	14.89931	01	18	28.99	+08	41	14.1		046
1990	TS8	1990	10	15.87905	01	17	36.01	+08	38	19.6		046
1990	TS8	1990	10	15.89178	01	17	35.36	+08	38	17.6		046
1990	TT8	* 1990	10	14.88657	01	20	28.85	+10	06	08.1	16.7	046
1990	TT8	1990	10	14.89931	01	20	28.13	+10	06	09.7		046
1990	TT8	1990	10	15.87905	01	19	42.53	+10	12	16.6		046
1990	TT8	1990	10	15.89178	01	19	41.99	+10	12	20.4		046
1990	TU8	* 1990	10	14.88657	01	22	40.08	+09	51	30.9	16.7	046
1990	TU8	1990	10	14.89931	01	22	39.33	+09	51	28.2		046
1990	TU8	1990	10	15.87905	01	21	42.11	+09	47	36.2		046
1990	TU8	1990	10	15.89178	01	21	41.07	+09	47	32.2		046
1990	TV8	* 1990	10	14.88657	01	24	03.87	+08	54	51.8	16.7	046
1990	TV8	1990	10	14.89931	01	24	03.34	+08	54	52.8		046
1990	TV8	1990	10	15.87905	01	23	15.06	+08	57	00.7		046
1990	TV8	1990	10	15.89178	01	23	14.31	+08	57	04.2		046
1990	TW8	* 1990	10	14.88657	01	24	13.38	+09	40	50.0	16.8	046
1990	TW8	1990	10	14.89931	01	24	12.79	+09	40	48.9		046
1990	TW8	1990	10	15.87905	01	23	08.55	+09	39	18.3		046
1990	TW8	1990	10	15.89178	01	23	07.72	+09	39	20.7		046
1990	TX8	* 1990	10	14.88657	01	27	09.70	+09	29	01.1	16.8	046
1990	TX8	1990	10	14.89931	01	27	09.11	+09	28	57.1		046
1990	TX8	1990	10	15.87905	01	26	18.68	+09	26	40.4		046
1990	TX8	1990	10	15.89178	01	26	17.77	+09	26	40.1		046
1990	TY8	* 1990	10	15.81620	00	36	41.77	+08	24	36.5	16.7	046
1990	TY8	1990	10	15.82894	00	36	41.04	+08	24	35.7		046
1990	TY8	1990	10	16.81429	00	35	49.56	+08	21	51.3		046
1990	TY8	1990	10	16.82708	00	35	49.08	+08	21	49.5		046
1990	UJ1	1990	10	24.89416	01	47	43.20	+17	30	16.9	16.7	046
1990	UJ1	1990	10	24.90833	01	47	42.44	+17	30	06.5		046
1990	UJ1	1990	10	24.92905	01	47	41.38	+17	29	54.8		046
1990	UJ1	1990	10	24.94317	01	47	40.75	+17	29	44.5		046
126		1990	10	14.88657	01	24	25.24	+08	45	39.9		046
126		1990	10	14.89931	01	24	24.47	+08	45	36.3		046
126		1990	10	15.87905	01	23	27.80	+08	41	49.3		046
126		1990	10	15.89178	01	23	27.02	+08	41	46.8		046
139		1990	10	15.81620	00	37	44.27	+08	05	12.1		046
139		1990	10	15.82894	00	37	43.63	+08	05	09.8		046
139		1990	10	16.81429	00	36	52.71	+08	02	12.0		046
139		1990	10	16.82708	00	36	52.04	+08	02	10.1		046
406		1990	10	24.92905	01	49	12.19	+18	31	21.0		046
406		1990	10	24.94317	01	49	11.42	+18	31	17.3		046
492		1990	10	14.85486	00	58	13.53	+04	50	52.4		046
492		1990	10	14.86771	00	58	12.98	+04	50	49.6		046
492		1990	10	15.84832	00	57	28.02	+04	46	51.4		046
492		1990	10	15.86111	00	57	27.43	+04	46	48.4		046
656		1990	10	15.84832	00	58	27.45	+06	03	31.5		046
656		1990	10	15.86111	00	58	26.91	+06	03	27.6		046
693		1990	10	12.92882	01	28	22.29	+22	07	37.7		046
693		1990	10	12.94236	01	28	21.50	+22	07	37.1		046
693		1990	10	13.88993	01	27	27.16	+22	06	44.7		046
693		1990	10	13.90278	01	27	26.40	+22	06	43.9		046
693		1990	10	16.84815	01	24	36.54	+22	03	08.5		046

693	1990	10	16.86094	01	24	35.78	+22	03	07.4	046
1027	1990	10	13.82951	01	06	47.90	+06	45	26.2	046
1027	1990	10	13.84236	01	06	47.21	+06	45	22.5	046
1027	1990	10	14.82361	01	06	03.60	+06	41	17.7	046
1027	1990	10	14.83634	01	06	03.16	+06	41	15.2	046
1226	1990	10	24.92905	01	56	45.87	+16	15	58.3	046
1226	1990	10	24.94317	01	56	45.07	+16	15	57.2	046
1366	1990	10	14.88657	01	16	37.41	+07	05	51.6	046
1366	1990	10	14.89931	01	16	36.81	+07	05	50.8	046
1366	1990	10	15.87905	01	15	42.04	+07	04	04.3	046
1366	1990	10	15.89178	01	15	41.35	+07	04	03.3	046
1669	1990	10	14.88657	01	15	24.79	+08	01	31.3	046
1669	1990	10	14.89931	01	15	24.32	+08	01	29.3	046
1669	1990	10	15.87905	01	14	40.74	+07	57	18.4	046
1669	1990	10	15.89178	01	14	40.11	+07	57	15.0	046
1810	1990	10	24.89416	01	51	11.91	+16	53	53.5	046
1810	1990	10	24.90833	01	51	11.04	+16	53	48.3	046
1810	1990	10	24.92905	01	51	10.10	+16	53	39.3	046
1810	1990	10	24.94317	01	51	09.22	+16	53	32.0	046
2665	1990	10	24.92905	01	53	36.90	+19	22	07.8	046
2665	1990	10	24.94317	01	53	36.04	+19	22	02.5	046
2718	1990	10	14.88657	01	24	41.04	+07	57	02.0	046
2718	1990	10	14.89931	01	24	40.56	+07	56	57.1	046
2718	1990	10	15.87905	01	23	53.71	+07	52	48.0	046
2718	1990	10	15.89178	01	23	53.11	+07	52	44.7	046
3048	1990	10	13.82951	01	08	46.67	+08	12	54.2	046
3048	1990	10	13.84236	01	08	45.83	+08	12	50.5	046
3048	1990	10	14.82361	01	07	50.64	+08	06	23.3	046
3048	1990	10	14.83634	01	07	50.24	+08	06	18.5	046
3337	1990	10	14.88657	01	21	52.20	+07	18	04.4	046
3337	1990	10	14.89931	01	21	51.72	+07	18	00.9	046
3337	1990	10	15.87905	01	21	04.35	+07	12	30.8	046
3337	1990	10	15.89178	01	21	03.75	+07	12	26.3	046
3587	1990	10	14.85486	01	05	59.29	+03	35	19.0	046
3587	1990	10	14.86771	01	05	58.70	+03	35	16.9	046
3587	1990	10	15.84832	01	05	04.32	+03	32	57.8	046
3587	1990	10	15.86111	01	05	03.60	+03	32	55.2	046
3654	1990	10	14.85486	00	58	52.19	+06	26	57.2	046
3654	1990	10	14.86771	00	58	51.61	+06	26	51.1	046
3654	1990	10	15.84832	00	58	06.07	+06	19	48.1	046
3654	1990	10	15.86111	00	58	05.41	+06	19	41.9	046
3667	1990	10	12.92882	01	30	25.85	+21	54	10.2	046
3667	1990	10	12.94236	01	30	25.05	+21	54	12.0	046
3667	1990	10	13.88993	01	29	26.09	+21	56	17.7	046
3667	1990	10	13.90278	01	29	25.26	+21	56	19.7	046
3667	1990	10	16.84815	01	26	19.22	+22	01	49.8	046
3667	1990	10	16.86094	01	26	18.39	+22	01	51.1	046
3810	1990	10	24.92905	01	52	49.71	+18	05	08.1	046
3810	1990	10	24.94317	01	52	48.82	+18	05	00.9	046
4160	1990	10	14.85486	00	59	29.31	+04	46	57.7	046
4160	1990	10	14.86771	00	59	28.49	+04	46	52.2	046
4160	1990	10	15.84832	00	58	38.19	+04	39	49.1	046
4160	1990	10	15.86111	00	58	37.40	+04	39	44.6	046

16.6

091 Aurec-sur-Loire

R. Chanal, Observatoire de Nurol, F-43110 Aurec-sur-Loire, France

0.41-m reflector

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

095 Crimean Astrophysical Observatory

G. R. Kastel', Institute for Theoretical Astronomy,
Naberezhnaya Kutuzova 10, Leningrad 191187, U.S.S.R.

Observers N. S. Chernykh, L. I. Chernykh, L. G. Karachkina,
A. V. Tarasova, L. V. Zhuravleva

1990 TR	1990 09	24.97558	02 26 04.24	+11 03 33.2	14	095
1990 TR	1990 09	24.99641	02 26 04.06	+11 04 08.8		095
1990 TR	1990 10	14.89581	02 18 06.50	+20 50 40.1	14	095
1990 TR	1990 10	14.91643	02 18 05.36	+20 51 02.7		095
1990 TR	1990 10	15.96655	02 17 11.79	+21 14 18.7	14	095
1990 TR	1990 10	15.99433	02 17 10.11	+21 14 54.2		095
1990 TR	1990 10	16.88645	02 16 24.84	+21 33 58.2	14	095
1990 TR	1990 10	17.95892	02 15 27.42	+21 56 02.7		095
1990 TR	1990 10	17.97976	02 15 26.16	+21 56 26.9		095
1990 TR	1990 10	24.82014	02 09 14.56	+23 55 49.8		095
1990 TR	1990 10	24.84201	02 09 13.18	+23 56 08.8		095
1990 TR	1990 10	28.91840	02 05 39.56	+24 50 35.5		095
1990 TR	1990 10	28.95000	02 05 37.60	+24 50 59.1		095
1990 TR	1990 11	15.79688	01 55 55.67	+26 56 10.4		095
1990 TR	1990 11	15.84028	01 55 54.88	+26 56 18.7		095

364 JCPM Kagoshima Station

M. Takeishi, Odori 4, Hamatonbetsu Esashigun, Hokkaido 098-57, Japan

Observers M. Mukai, M. Takeishi

Measurer M. Takeishi

0.25-m f/4.2 Wright-Schmidt telescope

1990 UG3	1990 11	12.54167	03 04 08.99	+14 55 15.1	14	364
1990 UG3	1990 11	12.55903	03 04 08.02	+14 55 19.0		364
1990 UG3	1990 11	21.54583	02 56 08.56	+15 29 24.1	15.5	364
1990 UG3	1990 11	21.56319	02 56 07.68	+15 29 27.9		364
1990 UG3	1990 11	22.53056	02 55 20.14	+15 33 23.6		364
1990 UG3	1990 11	22.54792	02 55 19.32	+15 33 27.7		364
1990 VU1	1990 11	12.61875	04 01 40.00	+14 37 22.8	16	364
1990 VU1	1990 11	12.63611	04 01 39.21	+14 37 24.5		364
1990 VL2	1990 11	21.58403	03 47 25.85	+14 03 59.7	17	364
1990 VL2	1990 11	21.60139	03 47 24.76	+14 03 55.7		364
1990 VL2	1990 11	22.57083	03 46 27.36	+14 01 28.6		364
1990 VL2	1990 11	22.58819	03 46 26.45	+14 01 26.7		364
1990 VV2	1990 11	12.54167	03 06 40.61	+16 50 00.2	16.5	364
1990 VV2	1990 11	12.55903	03 06 39.72	+16 49 50.7		364
1990 VV2	1990 11	21.54583	02 59 21.09	+15 37 36.5	16	364
1990 VV2	1990 11	21.56319	02 59 20.28	+15 37 26.1		364
1990 VV2	1990 11	22.53056	02 58 36.42	+15 30 03.3		364
1990 VV2	1990 11	22.54792	02 58 35.19	+15 29 47.4		364
1990 VW2	1990 11	12.54167	03 10 48.49	+16 05 13.5	16.5	364
1990 VW2	1990 11	12.55903	03 10 47.37	+16 05 04.5		364
1990 VW2	1990 11	13.54097	03 09 48.95	+15 59 07.4		364
1990 VW2	1990 11	13.55833	03 09 47.93	+15 59 04.3		364
1990 VW2	1990 11	21.50486	03 02 14.60	+15 12 53.0	17	364
1990 VW2	1990 11	21.52292	03 02 13.52	+15 12 44.6		364
1990 VZ3 *	1990 11	12.57917	03 50 24.94	+15 43 00.6	17	364
1990 VZ3	1990 11	12.60069	03 50 23.58	+15 42 51.2		364
1990 VZ3	1990 11	14.60625	03 48 35.93	+15 31 27.8		364
1990 VZ3	1990 11	14.62361	03 48 34.99	+15 31 20.2		364
1990 VG4 *	1990 11	12.57917	03 50 11.36	+14 35 29.8	16	364
1990 VG4	1990 11	12.60069	03 50 10.20	+14 35 20.9		364
1990 VG4	1990 11	21.58403	03 42 15.03	+13 29 24.4	16.5	364
1990 VG4	1990 11	21.60139	03 42 14.16	+13 29 17.7		364
1990 VG4	1990 11	22.57083	03 41 22.17	+13 22 28.3		364

1990 VG4	1990 11	22.58819	03 41	21.30	+13 22	18.9		364
1990 VH4 *	1990 11	13.54097	03 05	05.38	+16 48	17.7		364
1990 VH4	1990 11	13.55833	03 05	04.50	+16 48	14.2		364
1990 VH4	1990 11	21.54583	02 58	00.19	+16 26	15.7	17	364
1990 VH4	1990 11	21.56319	02 57	59.44	+16 26	14.3		364
1990 VH4	1990 11	22.53056	02 57	10.17	+16 23	41.2		364
1990 VH4	1990 11	22.54792	02 57	09.35	+16 23	37.7		364

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

0.60-m reflector

1975 UE	1990 09	21.67639	00 41	43.89	+04 11	08.8	17	372
1975 UE	1990 09	21.68681	00 41	43.54	+04 11	05.2		372
1981 EX24	1990 11	13.66979	03 18	03.02	+16 12	41.6	18	372
1981 EX24	1990 11	13.67934	03 18	02.28	+16 12	40.6		372
1981 EX24	1990 11	14.71840	03 17	10.95	+16 09	20.5	17.5	372
1981 EX24	1990 11	14.72865	03 17	10.32	+16 09	17.9		372
1987 YJ	1990 10	15.76389	03 14	17.17	+26 43	23.8	17	372
1987 YJ	1990 10	16.78569	03 13	33.50	+26 43	31.8		372
1987 YJ	1990 10	17.74479	03 12	51.15	+26 43	26.7		372
1987 YJ	1990 11	14.68160	02 44	00.87	+25 20	34.2	16	372
1990 QE9	1990 09	20.60313	22 35	39.04	-09 17	03.4	18	372
1990 QE9	1990 09	20.61580	22 35	38.24	-09 17	06.0		372
1990 SD	1990 10	08.45729	00 27	36.12	+10 30	31.4	17.5	372
1990 SD	1990 10	08.46944	00 27	35.46	+10 30	26.3		372
1990 SM2	1990 09	30.77326	01 32	28.37	-03 18	09.0	18	372
1990 SM2	1990 09	30.78472	01 32	27.86	-03 18	11.4		372
1990 SO2	1990 10	19.65174	01 23	17.34	-05 21	55.9	17.5	372
1990 SO2	1990 10	20.60139	01 22	23.31	-05 25	13.6	17	372
1990 SO2	1990 10	20.60729	01 22	23.03	-05 25	13.9	17.5	372
1990 SO2	1990 10	20.61319	01 22	22.74	-05 25	14.1		372
1990 SO2	1990 10	23.61163	01 19	35.91	-05 34	00.1	17	372
1990 SO2	1990 10	23.62083	01 19	35.44	-05 34	00.6		372
1990 SS3	1990 10	08.43733	00 31	06.51	+08 11	16.5	16	372
1990 SS3	1990 10	08.44792	00 31	05.81	+08 11	19.8		372
1990 SS3	1990 10	23.57153	00 16	31.61	+09 15	40.8	16.5	372
1990 SS3	1990 10	23.58073	00 16	31.13	+09 15	44.5		372
1990 SE4	1990 10	15.68885	00 31	14.91	+04 04	44.1	18	372
1990 SE4	1990 10	15.70035	00 31	14.32	+04 04	39.5		372
1990 ST4	1990 10	15.60660	22 28	29.57	-10 08	48.9	18	372
1990 ST4	1990 10	15.61667	22 28	29.80	-10 08	47.1		372
1990 TR	1990 10	20.66562	02 13	00.76	+22 47	45.1	14	372
1990 TR	1990 10	20.67743	02 13	00.05	+22 48	01.0		372
1990 TY	1990 10	17.63885	01 22	17.21	-05 09	46.9	17	372
1990 TY	1990 10	17.64896	01 22	16.76	-05 09	57.8		372
1990 TY	1990 10	20.62465	01 19	56.85	-06 09	39.5	17	372
1990 TY	1990 10	20.63542	01 19	56.22	-06 09	52.0		372
1990 TY	1990 10	26.66285	01 15	20.80	-08 03	28.2	17	372
1990 TY	1990 10	27.61771	01 14	39.16	-08 20	28.8	17	372
1990 TY	1990 10	27.62882	01 14	38.74	-08 20	37.0		372
1990 TE1	1990 10	26.79861	03 04	29.85	+28 25	53.0	17	372
1990 TE1	1990 10	26.81007	03 04	29.18	+28 25	56.4		372
1990 TQ1	1990 10	20.58472	01 20	13.89	-04 52	58.4	17	372
1990 TQ1	1990 10	23.63472	01 17	45.41	-05 04	32.2	17.5	372
1990 TL3	1990 10	17.76076	03 01	31.60	+21 48	44.7	17.5	372
1990 TL3	1990 10	17.77431	03 01	31.12	+21 48	48.5		372
1990 TL3	1990 10	20.68924	02 59	33.00	+21 50	35.9	17	372
1990 TL3	1990 10	20.70104	02 59	32.43	+21 50	36.2		372
1990 TL3	1990 10	23.71788	02 57	15.19	+21 50	48.9	16.5	372

1990 TL3	1990 10	23.73056	02 57	14.46	+21 50	49.2		372
1990 TL3	1990 10	26.72256	02 54	46.05	+21 49	27.9	16.5	372
1990 TL3	1990 10	26.73715	02 54	45.57	+21 49	27.0		372
1990 TL3	1990 10	27.68559	02 53	56.65	+21 48	41.4	16	372
1990 TL3	1990 10	27.69757	02 53	56.03	+21 48	41.0		372
1990 TZ8	1990 09	21.67639	00 38	36.89	+04 21	46.1	17.5	372
1990 TZ8	1990 09	21.68681	00 38	36.27	+04 21	48.1		372
1990 TT9	1990 09	26.73854	01 30	24.57	+16 36	22.3	18	372
1990 TT9	1990 09	26.74896	01 30	23.90	+16 36	19.0		372
1990 UF	1990 10	15.73125	01 46	43.05	+11 21	24.4	17	372
1990 UF	1990 10	27.59549	01 37	42.43	+10 08	36.0	17	372
1990 UF	1990 10	27.60729	01 37	41.98	+10 08	35.0		372
1990 UF	1990 10	28.72972	01 36	52.51	+10 01	47.0		372
1990 UG	1990 10	15.73125	01 48	09.53	+10 45	28.4	17.5	372
1990 UG	1990 10	19.70382	01 45	13.11	+10 12	41.5	17.5	372
1990 UG	1990 11	11.57465	01 29	35.52	+07 13	26.9	17	372
1990 UG	1990 11	11.58437	01 29	35.05	+07 13	36.7		372
1990 UG	1990 11	13.64861	01 28	28.45	+06 59	51.1	17	372
1990 UG	1990 11	13.65851	01 28	28.22	+06 59	46.9		372
1990 UV *	1990 10	17.63885	01 22	32.03	-04 22	38.2	18	372
1990 UV	1990 10	17.64896	01 22	31.60	-04 22	40.5		372
1990 UV	1990 10	19.62917	01 20	39.23	-04 27	53.2	18	372
1990 UV	1990 10	20.58472	01 19	45.82	-04 30	03.5	18	372
1990 UV	1990 10	23.63472	01 16	56.82	-04 35	47.4	17.5	372
1990 UA1	1990 10	26.72256	02 57	15.15	+22 06	03.6	16	372
1990 UA1	1990 10	26.73715	02 57	14.54	+22 05	58.0		372
1990 UA1	1990 10	27.68559	02 56	29.20	+21 58	12.0	16	372
1990 UA1	1990 10	27.69757	02 56	28.66	+21 58	05.9		372
1990 UC1 *	1990 10	20.65069	01 07	24.87	+12 27	02.3	17	372
1990 UC1	1990 10	23.65035	01 04	09.71	+12 24	38.0	17	372
1990 UC1	1990 10	23.66146	01 04	08.95	+12 24	37.8		372
1990 UC1	1990 10	26.69896	01 01	02.32	+12 22	04.0	17.5	372
1990 UC1	1990 10	26.71181	01 01	01.56	+12 22	02.2		372
1990 UD1 *	1990 10	20.68924	03 00	50.01	+21 46	11.1	18	372
1990 UD1	1990 10	20.70104	03 00	49.24	+21 46	09.2		372
1990 UD1	1990 10	23.71788	02 58	30.89	+21 39	23.4	18	372
1990 UD1	1990 10	23.73056	02 58	30.06	+21 39	21.7		372
1990 UD1	1990 10	26.72256	02 56	04.24	+21 31	28.1	17.5	372
1990 UD1	1990 10	26.73715	02 56	03.57	+21 31	25.6		372
1990 UD1	1990 10	27.68559	02 55	16.19	+21 28	42.7	17.5	372
1990 UD1	1990 10	27.69757	02 55	15.57	+21 28	40.4		372
1990 UD1	1990 11	11.60799	02 42	13.40	+20 35	09.9	18	372
1990 UD1	1990 11	13.68958	02 40	26.66	+20 26	34.3	18	372
1990 UC2 *	1990 10	26.66285	01 13	30.19	-08 15	30.4	17	372
1990 UC2	1990 10	27.61771	01 12	42.51	-08 13	47.5	17	372
1990 UC2	1990 10	27.62882	01 12	41.85	-08 13	47.7		372
1990 UD2	1990 10	23.67847	02 42	55.03	+12 29	53.5	18.5	372
1990 UD2	1990 10	23.70069	02 42	53.84	+12 29	51.7		372
1990 UD2 *	1990 10	26.68194	02 39	53.28	+12 24	38.2	18	372
1990 UD2	1990 10	27.64410	02 38	53.82	+12 22	54.5	17	372
1990 UE2	1990 10	23.74410	03 12	13.26	+15 49	30.6	18.5	372
1990 UE2	1990 10	23.75868	03 12	12.65	+15 49	26.2		372
1990 UE2 *	1990 10	26.77292	03 10	05.99	+15 27	07.4	17	372
1990 UE2	1990 10	26.78438	03 10	05.33	+15 27	02.5		372
1990 UE2	1990 10	27.71042	03 09	24.08	+15 20	03.3	17	372
1990 UE2	1990 10	27.72240	03 09	23.51	+15 19	58.3		372
1990 UE2	1990 11	10.69906	02 57	46.94	+13 32	26.4	17.5	372
1990 UE2	1990 11	10.70937	02 57	46.34	+13 32	22.8		372
1990 UF2 *	1990 10	27.66007	02 43	15.88	+12 56	09.0	17.5	372

1990 UF2	1990 10	27.67257	02 43	15.33	+12 56	03.3		372
1990 UF2	1990 10	28.67535	02 42	17.02	+12 48	26.8	17.5	372
1990 UF2	1990 10	30.77257	02 40	13.35	+12 32	22.0	18	372
1990 UL2 *	1990 10	23.79549	03 35	27.16	+15 32	14.3	16	372
1990 UL2	1990 10	26.74931	03 33	09.94	+15 33	56.1	16	372
1990 UL2	1990 10	26.76076	03 33	09.40	+15 33	59.6		372
1990 UL2	1990 10	27.73403	03 32	20.90	+15 34	27.1	16	372
1990 UL2	1990 10	27.74514	03 32	20.04	+15 34	28.9		372
1990 UL2	1990 11	11.70972	03 17	05.51	+15 38	38.2	16.3	372
1990 UL2	1990 11	11.71944	03 17	04.81	+15 38	38.4		372
1990 UL2	1990 11	13.66979	03 14	53.11	+15 39	01.9	16	372
1990 UL2	1990 11	13.67934	03 14	52.29	+15 39	01.9		372
1990 UL2	1990 11	14.71840	03 13	41.69	+15 39	15.3	16	372
1990 UL2	1990 11	14.72865	03 13	41.01	+15 39	15.9		372
1990 UN2 *	1990 10	26.77292	03 11	39.06	+15 39	08.8	18	372
1990 UN2	1990 10	26.78438	03 11	38.39	+15 39	06.6		372
1990 UN2	1990 10	27.71042	03 10	42.05	+15 38	17.6	18	372
1990 UN2	1990 10	27.72240	03 10	41.60	+15 38	15.2		372
1990 UN2	1990 11	11.69062	02 54	21.31	+15 20	18.1	17	372
1990 UN2	1990 11	13.61076	02 52	14.33	+15 17	47.4		372
1990 VY1 *	1990 11	11.72986	04 10	20.97	+11 08	08.3	17	372
1990 VY1	1990 11	11.74028	04 10	20.63	+11 08	02.1		372
1990 VY1	1990 11	13.71007	04 08	50.14	+10 47	09.6	17	372
1990 VY1	1990 11	13.71875	04 08	49.46	+10 47	04.1		372
1990 VZ1 *	1990 11	11.72986	04 10	31.83	+11 20	39.2	18.5	372
1990 VZ1	1990 11	11.74028	04 10	30.84	+11 20	35.9		372
1990 VZ1	1990 11	13.71007	04 08	21.93	+11 14	45.6	18.5	372
1990 VZ1	1990 11	13.71875	04 08	21.55	+11 14	41.4		372
1990 VN2 *	1990 11	10.67743	02 18	32.23	-10 14	46.8	17	372
1990 VN2	1990 11	10.68854	02 18	31.44	-10 14	49.2		372
1990 VN2	1990 11	13.63021	02 16	23.42	-10 21	10.5		372
1990 VN2	1990 11	13.63854	02 16	23.07	-10 21	12.0		372
1990 VP2 *	1990 11	11.69062	02 53	17.64	+14 58	43.8	16.5	372
1990 VP2	1990 11	13.61076	02 51	23.47	+15 02	11.4	16.5	372
1990 VQ2 *	1990 11	11.69062	02 54	41.29	+15 05	34.2	18	372
1990 VQ2	1990 11	13.61076	02 52	52.39	+15 01	11.6	18.5	372
1990 VR2 *	1990 11	11.69062	02 54	58.91	+15 04	53.8	18	372
1990 VR2	1990 11	13.61076	02 53	20.03	+14 51	16.1	18	372
1990 VS2 *	1990 11	11.72986	04 12	12.05	+11 26	30.5	17.5	372
1990 VS2	1990 11	11.74028	04 12	11.48	+11 26	27.2		372
1990 VS2	1990 11	13.71007	04 10	22.24	+11 20	53.9	17.5	372
1990 VS2	1990 11	13.71875	04 10	21.57	+11 20	52.9		372
1990 VC3 *	1990 11	11.57465	01 28	41.52	+07 22	51.4	18	372
1990 VC3	1990 11	13.64861	01 28	04.94	+07 17	56.4	18	372
1990 VD3 *	1990 11	11.60799	02 41	54.02	+20 13	16.0	18	372
1990 VD3	1990 11	13.68958	02 39	47.77	+20 01	08.8	18	372
1990 VE3 *	1990 11	11.60799	02 42	40.09	+21 06	30.5	18	372
1990 VE3	1990 11	13.68958	02 40	20.39	+21 05	48.8	18	372
1990 VS3 *	1990 11	11.70972	03 16	07.46	+16 06	33.4	17.5	372
1990 VS3	1990 11	11.71944	03 16	06.76	+16 06	33.4		372
1990 VS3	1990 11	13.66979	03 13	55.45	+16 06	19.4	17.5	372
1990 VS3	1990 11	13.67934	03 13	54.76	+16 06	18.9		372
1990 VS3	1990 11	14.71840	03 12	44.58	+16 06	08.6	18	372
1990 VS3	1990 11	14.72865	03 12	43.77	+16 06	07.2		372
1990 VT3 *	1990 11	11.70972	03 17	14.37	+16 00	35.5	18	372
1990 VT3	1990 11	11.71944	03 17	13.96	+16 00	32.1		372
1990 VT3	1990 11	13.66979	03 15	22.71	+15 44	20.5	18	372
1990 VT3	1990 11	13.67934	03 15	22.31	+15 44	15.8		372
1990 VT3	1990 11	14.71840	03 14	23.53	+15 35	43.5	18	372

1990 VT3	1990 11 14.72865	03 14 22.94	+15 35 39.6		372
1990 VU3 *	1990 11 11.70972	03 18 07.28	+16 06 00.5	18	372
1990 VU3	1990 11 11.71944	03 18 06.59	+16 05 59.6		372
1990 VU3	1990 11 13.66979	03 16 25.23	+15 59 14.9	18	372
1990 VU3	1990 11 13.67934	03 16 24.49	+15 59 13.8		372
1990 VU3	1990 11 14.71840	03 15 30.30	+15 55 40.1	18	372
1990 VU3	1990 11 14.72865	03 15 29.73	+15 55 38.9		372
1990 WE	1990 11 21.49340	01 08 18.30	-05 28 35.9	17	372
1990 WE	1990 11 23.61336	01 07 34.52	-05 20 18.4	17	372
1990 WN2 *	1990 11 17.75156	04 25 25.15	+14 04 19.2	16.5	372
1990 WN2	1990 11 17.76250	04 25 24.40	+14 04 22.7		372
1990 WN2	1990 11 21.68750	04 21 19.08	+14 21 29.3	16	372
1990 WN2	1990 11 21.69965	04 21 18.23	+14 21 33.5		372
1990 WO2 *	1990 11 17.77326	04 13 56.46	+17 14 12.6	17.5	372
1990 WO2	1990 11 17.78403	04 13 55.60	+17 14 11.1		372
1990 WO2	1990 11 21.66354	04 07 53.04	+17 15 44.4	17	372
1990 WO2	1990 11 21.67535	04 07 52.36	+17 15 41.8		372
1990 WP2 *	1990 11 21.49340	01 09 06.65	-06 05 49.6	17.5	372
1990 WP2	1990 11 23.61336	01 08 15.43	-05 52 41.3	17.5	372
867	1990 11 13.64861	01 28 35.65	+06 56 19.6	16.5	372
2674	1990 11 11.70972	03 14 23.97	+16 11 41.9	17	372
2674	1990 11 11.71944	03 14 23.43	+16 11 40.9		372
2674	1990 11 13.66979	03 13 22.53	+16 07 29.6	17	372
2674	1990 11 13.67934	03 13 22.25	+16 07 28.8		372
2674	1990 11 14.71840	03 12 49.46	+16 05 13.2	17	372
2674	1990 11 14.72865	03 12 49.20	+16 05 11.7		372
2679	1990 10 27.59549	01 39 08.37	+09 53 41.6	16	372
2679	1990 10 27.60729	01 39 07.80	+09 53 37.2		372
2679	1990 10 28.72972	01 38 13.21	+09 43 52.1		372
2679	1990 11 11.57465	01 28 10.24	+07 50 53.6	17.5	372
2679	1990 11 13.64861	01 26 55.30	+07 35 46.4	17.5	372
2769	1990 10 23.67847	02 43 36.29	+12 28 13.7	16.5	372
2769	1990 10 23.70069	02 43 34.89	+12 28 07.2		372
2769	1990 10 26.68194	02 41 19.77	+12 18 32.5	17	372
2769	1990 10 27.64410	02 40 35.17	+12 14 22.2	16.5	372
3762	1990 10 26.77292	03 13 33.37	+15 37 06.2	16.5	372
3762	1990 10 26.78438	03 13 32.97	+15 37 05.2		372
3762	1990 10 27.71042	03 12 41.67	+15 32 54.7	16.5	372
3762	1990 10 27.72240	03 12 41.21	+15 32 52.6		372
3842	1990 09 20.60313	22 39 25.78	-08 23 33.0	18	372
3842	1990 09 20.61580	22 39 25.19	-08 23 39.8		372

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Observers T. Nomura, M. Sugano

Measurers T. Nomura, K. Kawanishi

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AGK3, GSC

1990 TP	1990 10 15.70903	01 49 54.82	+02 58 39.3	16.0	374
1990 TP	1990 10 20.57295	01 45 28.91	+02 29 25.1	16.0	374
1990 TX	1990 10 20.57295	01 49 56.36	+02 49 05.1	15.5	374
1990 TX	1990 10 20.58719	01 49 55.64	+02 49 03.9	15.5	374
1990 UQ2 *	1990 10 28.70257	03 41 48.67	+20 30 06.5	16.0	374
1990 UQ2	1990 10 28.73116	03 41 47.00	+20 30 15.8	16.0	374
1990 UQ2	1990 10 30.79288	03 39 49.69	+20 38 59.2		374
1990 UQ2	1990 11 11.53611	03 26 57.19	+21 20 37.0	15.5	374
1990 UQ2	1990 11 11.58681	03 26 53.55	+21 20 50.0	16.0	374
1990 UQ2	1990 11 15.61160	03 22 07.92	+21 31 53.2	15.5	374
1990 UQ2	1990 11 15.63330	03 22 06.21	+21 31 54.3	15.5	374

1990 UE3	1990 11 11.63021	04 03 46.32	+24 05 02.8	16.0	374
1990 UE3	1990 11 11.67465	04 03 44.12	+24 05 02.2		374
1990 VD	1990 11 11.55417	03 56 12.86	+20 47 19.1	16.0	374
1990 VD	1990 11 11.60417	03 56 10.21	+20 47 14.5	16.0	374
1990 VM1	1990 11 11.53611	03 29 05.32	+21 40 58.6	16.0	374
1990 VN1	1990 11 11.53611	03 32 16.34	+21 03 57.9	16.0	374
1990 VX1	1990 11 11.63021	04 11 52.59	+21 53 05.5	16.5	374
1990 VX1	1990 11 11.67465	04 11 50.06	+21 52 56.8		374
1990 VJ2	1990 11 11.63021	04 12 13.31	+22 26 21.8	16.0	374
1990 VJ2	1990 11 11.67465	04 12 10.96	+22 26 11.0		374
1990 VX2	1990 11 13.68131	04 17 22.60	+26 40 11.7	14	374
1990 VX2	1990 11 13.70214	04 17 20.73	+26 40 40.5		374
1990 VY2 *	1990 11 11.53611	03 27 15.66	+24 22 30.8	16.0	374
1990 VY2	1990 11 11.58681	03 27 12.13	+24 22 24.4	16.0	374
1990 VY2	1990 11 17.60382	03 20 40.19	+24 07 20.8	16.0	374
1990 VY2	1990 11 17.69201	03 20 34.06	+24 07 08.0	16.0	374
1990 VZ2 *	1990 11 11.53611	03 34 40.40	+23 59 06.9	16.0	374
1990 VZ2	1990 11 11.58681	03 34 37.61	+23 59 08.9	16.0	374
1990 VZ2	1990 11 17.60382	03 28 50.65	+23 57 38.3	16.0	374
1990 VZ2	1990 11 17.69201	03 28 45.21	+23 57 37.6	16.0	374
1990 VA3 *	1990 11 11.55417	03 50 33.87	+23 41 18.2	16.0	374
1990 VA3	1990 11 11.60417	03 50 30.38	+23 41 09.6	16.0	374
1990 VA3	1990 11 17.64271	03 43 28.22	+23 21 37.3	16.0	374
1990 VA3	1990 11 17.70868	03 43 23.45	+23 21 24.0	16.0	374
1990 VB3 *	1990 11 11.55417	03 53 21.57	+22 28 08.6	16.0	374
1990 VB3	1990 11 11.60417	03 53 18.39	+22 28 06.1	16.0	374
1990 VB3	1990 11 17.64271	03 46 48.33	+22 18 51.7	16.0	374
1990 VB3	1990 11 17.70868	03 46 43.78	+22 18 43.4	16.0	374
1990 VQ3 *	1990 11 11.53611	03 25 12.04	+21 29 55.5	16.0	374
1990 VQ3	1990 11 11.58681	03 25 09.46	+21 29 36.1	16.0	374
1990 VQ3	1990 11 15.61160	03 21 23.26	+21 00 55.4	16.0	374
1990 VQ3	1990 11 15.63330	03 21 21.86	+21 00 43.6	16.0	374
1990 VR3 *	1990 11 11.53611	03 39 11.58	+22 00 21.6	16.0	374
1990 VR3	1990 11 11.58681	03 39 09.02	+22 00 26.4	16.0	374
1990 VR3	1990 11 15.61160	03 35 26.86	+22 02 00.0	16.0	374
1990 VR3	1990 11 15.63330	03 35 25.16	+22 01 59.1	16.0	374
1990 VJ4 *	1990 11 15.70550	04 44 38.51	+33 59 50.0	15.0	374
1990 VJ4	1990 11 23.71351	04 37 20.99	+33 42 40.9	15.0	374
926	1990 10 30.79288	03 38 35.96	+20 29 50.8		374
1029	1990 10 30.79288	03 39 43.15	+20 51 27.2		374

385 Nihondaira Observatory Oohira station

T. Urata, 6-1, Muramatsuhara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan
 0.31-m f/5.6 reflector, 0.30-m f/3.8 hyperboloid astro-camera

AGK3, SAOC

1973 TP	1990 11 07.51111	01 54 42.36	+07 19 01.2	15.5	385
1973 TP	1990 11 07.52828	01 54 41.63	+07 18 49.6		c 385
1985 CA2	1990 10 26.59167	02 18 00.50	+03 17 51.1	16	385
1985 CA2	1990 10 26.61603	02 17 59.05	+03 17 43.3		385
1986 VV6	1990 10 19.68510	02 16 17.69	+06 07 40.8	16	385
1986 VV6	1990 10 19.70660	02 16 16.25	+06 07 38.7		385
1986 VV6	1990 10 20.72222	02 15 21.13	+06 04 23.9		385
1986 VV6	1990 10 20.74583	02 15 19.66	+06 04 17.0		385
1990 SO4	1990 10 21.68750	01 35 30.02	+27 18 33.2	15.5	385
1990 SO4	1990 10 21.70833	01 35 28.68	+27 18 27.5		385
1990 SO4	1990 11 07.46337	01 20 35.52	+25 14 33.6	15.5	385
1990 SO4	1990 11 07.49240	01 20 34.22	+25 14 18.3		I 385
1990 TD1	1990 10 26.55972	02 09 14.58	+08 25 32.9	15.5	385
1990 TD1	1990 10 26.57986	02 09 13.24	+08 25 29.4		385

1990 TD1	1990 11 10.50972	01 55 16.11	+08 18 20.3	16.5	385
1990 TD1	1990 11 10.52847	01 55 15.04	+08 18 20.2		385
1990 TM1	1990 11 10.63750	02 28 44.9	+07 28 43	16.5	r 385
1990 TM1	1990 11 10.66250	02 28 43.6	+07 28 40		r 385
1990 UC	1990 10 21.60625	02 16 34.41	+04 52 54.7	15.5	385
1990 UC	1990 10 21.62986	02 16 33.26	+04 52 39.5		385
1990 UC	1990 10 26.55208	02 12 53.74	+03 58 49.8	16	385
1990 UC	1990 10 26.57292	02 12 52.74	+03 58 37.2		385
1990 UC	1990 10 26.59167	02 12 51.79	+03 58 24.0		385
1990 UC	1990 10 26.61603	02 12 50.49	+03 58 09.5		385
1990 UC	1990 11 07.47361	02 04 19.46	+02 08 38.4	16	385
1990 UC	1990 11 07.50208	02 04 18.34	+02 08 25.5		385
1990 UD	1990 10 26.55972	02 07 48.17	+06 37 31.0	15.5	385
1990 UD	1990 10 26.57986	02 07 46.92	+06 37 30.0		385
1990 UD	1990 10 27.60690	02 06 44.48	+06 37 08.9	15	c 385
1990 UD	1990 11 07.51111	01 56 22.54	+06 41 33.5	15.5	385
1990 UD	1990 11 07.52828	01 56 21.52	+06 41 34.2		c 385
1990 UD	1990 11 10.50972	01 53 54.86	+06 45 44.7	16	385
1990 UD	1990 11 10.52847	01 53 53.81	+06 45 48.6		385
1990 UD	1990 11 11.63021	01 53 02.76	+06 47 45.3	16	385
1990 UD	1990 11 11.65486	01 53 01.73	+06 47 46.5		385
1990 UJ	1990 10 21.62986	02 17 45.24	+04 05 38.7		385
1990 UJ	1990 10 26.59167	02 13 17.43	+03 30 43.4	16.5	385
1990 UJ	1990 10 26.61603	02 13 15.96	+03 30 34.7		385
1990 UK	1990 10 21.62986	02 19 02.25	+04 12 23.0		385
1990 UK	1990 10 26.59167	02 13 32.95	+04 23 18.5	16.5	385
1990 UK	1990 10 26.61603	02 13 31.32	+04 23 23.2	16	385
1990 UM	1990 10 26.60417	02 10 47.85	-02 02 22.0	16.5	385
1990 UM	1990 10 26.62847	02 10 46.40	-02 02 14.3		385
1990 UM	1990 11 10.54931	01 57 41.59	-00 38 00.3	16.5	385
1990 UM	1990 11 10.57292	01 57 40.52	-00 37 49.4		385
1990 UM	1990 11 22.48125	01 50 31.37	+01 02 21.4	16.5	385
1990 UM	1990 11 22.51181	01 50 30.42	+01 02 40.9		385
1990 UZ1 *	1990 10 21.65347	02 40 47.13	+05 58 03.6	17	385
1990 UZ1	1990 10 21.67708	02 40 45.90	+05 57 55.4		385
1990 UZ1	1990 10 26.64236	02 36 30.03	+05 28 34.4	16.5	385
1990 UZ1	1990 10 26.66944	02 36 28.66	+05 28 26.9		385
1990 UA2 *	1990 10 21.65347	02 41 06.22	+06 19 37.6	17	385
1990 UA2	1990 10 21.67708	02 41 05.27	+06 19 33.5		385
1990 UA2	1990 10 26.64236	02 37 22.00	+06 01 30.7	17	385
1990 UA2	1990 10 26.66944	02 37 20.57	+06 01 26.8		385
1990 UA2	1990 11 10.63750	02 25 19.78	+05 25 35.7	17	385
1990 UA2	1990 11 10.66250	02 25 18.4	+05 25 33		V 385
1990 UB2 *	1990 10 21.65347	02 45 37.52	+06 44 21.7	16.5	385
1990 UB2	1990 10 21.67708	02 45 36.05	+06 44 19.0		385
1990 UB2	1990 10 26.64236	02 40 09.59	+06 27 53.5	16	385
1990 UB2	1990 10 26.66944	02 40 07.69	+06 27 49.1		385
1990 UB2	1990 11 10.63750	02 23 37.70	+05 54 02.1	16.5	385
1990 UB2	1990 11 10.66250	02 23 35.96	+05 54 01.1		385
1990 UE3 *	1990 10 26.71458	04 14 01.73	+23 52 30.3	17	D 385
1990 UE3	1990 10 26.76111	04 14 00.21	+23 52 41.5		385
1990 UE3	1990 11 10.65000	04 04 33.75	+24 04 51.7	16	385
1990 UE3	1990 11 10.67431	04 04 32.82	+24 04 56.1		385
1990 UE3	1990 11 11.69306	04 03 43.23	+24 05 02.9	16.5	t 385
1990 UE3	1990 11 11.71944	04 03 41.94	+24 05 03.9		385
1990 UF3 *	1990 10 26.71458	04 16 14.68	+23 29 01.5	17	D 385
1990 UF3	1990 10 26.76111	04 16 12.71	+23 28 59.9		385
1990 UF3	1990 11 11.69306	04 01 46.98	+23 37 09.8	17	385
1990 UF3	1990 11 11.71944	04 01 45.01	+23 37 08.7		385

1990 VB1	1990 10	26.71458	04 17	27.10	+23 16	47.8	17	D	385
1990 VB1	1990 10	26.76111	04 17	25.52	+23 16	50.6			385
1990 VB1 *	1990 11	11.69306	04 05	26.71	+22 53	03.3	17		385
1990 VB1	1990 11	11.71944	04 05	25.27	+22 53	00.0			385
1990 VH1 *	1990 11	07.51111	01 59	10.15	+07 26	14.5	16.5		385
1990 VH1	1990 11	07.52828	01 59	09.29	+07 26	10.1		c	385
1990 VH1	1990 11	10.50972	01 56	03.17	+07 25	57.3	16.5		385
1990 VH1	1990 11	10.52847	01 56	01.91	+07 25	58.3			385
1990 VH1	1990 11	11.63021	01 54	54.87	+07 26	06.6	16.5		385
1990 VH1	1990 11	11.65486	01 54	53.40	+07 26	07.7			385
1990 VH1	1990 11	16.56528	01 50	10.39	+07 28	09.3	16.5		385
1990 VH1	1990 11	16.59583	01 50	08.50	+07 28	11.6			385
1990 VW1	1990 11	22.66736	03 59	26.54	+23 05	37.6	16		385
1990 VF2 *	1990 11	10.50972	01 51	58.25	+08 06	03.0	16.5		385
1990 VF2	1990 11	10.52847	01 51	57.48	+08 05	56.8			385
1990 VF2	1990 11	11.63021	01 51	11.82	+08 00	35.6	16.5		385
1990 VF2	1990 11	11.65486	01 51	10.97	+08 00	23.6			385
1990 VK2 *	1990 11	11.63021	01 58	10.04	+06 50	16.3	17		385
1990 VK2	1990 11	11.65486	01 58	08.66	+06 50	15.8			385
1990 VK2	1990 11	16.56528	01 54	38.29	+06 53	36.5	17		385
1990 VK2	1990 11	16.59583	01 54	37.01	+06 53	35.3			385
1990 VH3 *	1990 11	11.69306	04 06	13.67	+24 39	15.5	17	t	385
1990 VH3	1990 11	11.71944	04 06	12.64	+24 39	08.7			385
1990 WU2 *	1990 11	22.66736	04 00	01.33	+23 17	15.9	17		385
1990 WV2	1990 11	22.66736	03 58	27.89	+23 53	48.4	16.5		385
222	1990 11	11.63021	01 52	18.36	+09 16	14.2	15		385
222	1990 11	11.65486	01 52	17.26	+09 16	08.9			385
847	1990 10	26.71458	04 16	44.09	+23 39	45.2		D	385
847	1990 10	26.76111	04 16	42.53	+23 39	43.4			385
1902	1990 10	21.60625	02 14	55.67	+04 46	40.8			385
1902	1990 10	21.62986	02 14	54.57	+04 46	38.6			385

392 JCPM Sapporo Station

K. Watanabe, 3-8-B203, Ashibetsu Chuo 3 Jo 4 Chome, Shiroishi-Ku,
Sapporo 005, Japan

0.30-m f/2.7 Schmidt camera

AGK3, SAOC

1990 SZ1	1990 10	23.49080	23 54	38.17	-04 57	56.4	16.0		392
1990 SZ1	1990 10	23.51505	23 54	37.72	-04 58	04.6			392
1990 TR	1990 10	23.50463	02 10	26.24	+23 35	39.5	14		392
1990 TR	1990 10	23.52101	02 10	25.26	+23 35	55.4			392

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

1936 YD	1990 10	16.59861	02 03	51.42	-10 38	51.1	15.5		399
1936 YD	1990 10	16.61354	02 03	50.49	-10 38	52.2			399
1936 YD	1990 10	19.67361	02 00	56.83	-10 42	26.6	15.5		399
1936 YD	1990 10	19.68856	02 00	56.14	-10 42	26.6			399
1936 YD	1990 10	22.58056	01 58	09.45	-10 43	42.8	15.5		399
1936 YD	1990 10	22.59931	01 58	08.40	-10 43	42.1			399
1936 YD	1990 11	17.45613	01 36	09.12	-09 18	14.1	16		399
1936 YD	1990 11	17.47569	01 36	08.39	-09 18	06.7			399
1978 VZ3	1989 01	06.67813	07 30	29.52	+24 28	51.2	16.5		399
1978 VZ3	1989 01	06.69271	07 30	28.64	+24 28	52.5			399
1978 VZ3	1989 01	13.64317	07 23	39.23	+24 41	42.8	16.5		399
1978 VZ3	1989 01	13.65764	07 23	38.10	+24 41	45.9			399

1978 VZ3	1989 01 29.49097	07 09 26.28	+24 59 48.8	16.5	399
1978 VZ3	1989 01 29.52361	07 09 24.56	+24 59 49.0		399
1978 VZ3	1989 01 29.53819	07 09 23.86	+24 59 51.6		399
1988 HB	1990 10 16.59861	01 55 48.03	-10 24 22.4	16.5	399
1988 HB	1990 10 16.61354	01 55 47.31	-10 24 25.2		399
1988 HB	1990 10 16.63409	01 55 46.43	-10 24 28.5		399
1988 HB	1990 10 19.67361	01 53 23.15	-10 32 48.4	16.5	399
1988 HB	1990 10 19.68856	01 53 22.50	-10 32 49.6		399
1988 HB	1990 10 22.58056	01 51 05.30	-10 39 24.9	16.5	399
1988 HB	1990 10 22.59931	01 51 04.62	-10 39 27.1		399
1988 HB	1990 10 22.61806	01 51 03.77	-10 39 30.5		399
1988 HB	1990 11 11.52303	01 36 27.11	-10 43 30.1	16.5	399
1988 HB	1990 11 11.53900	01 36 26.44	-10 43 28.8		399
1988 HB	1990 11 11.55625	01 36 25.91	-10 43 25.0		399
1988 HB	1990 11 17.45613	01 32 57.23	-10 30 27.3	16.5	399
1988 HB	1990 11 17.47569	01 32 56.52	-10 30 20.2		399
1988 VV3	1988 12 02.44745	03 24 11.35	+20 00 50.0	17	399
1988 VV3	1988 12 02.46216	03 24 10.56	+20 00 45.5		399
1988 VV3	1988 12 02.47755	03 24 09.91	+20 00 46.3		399
1988 VV3	1988 12 02.49213	03 24 08.97	+20 00 43.7		399
1989 SK5	1989 10 29.47269	00 09 31.30	+10 13 56.8	17	399
1989 SK5	1989 10 29.49688	00 09 30.71	+10 13 44.3		399
1989 SK5	1989 10 29.51701	00 09 30.07	+10 13 34.2		399
1990 SJ2	1990 10 15.58021	01 12 07.53	-01 54 30.3	16	399
1990 SJ2	1990 10 15.59618	01 12 06.70	-01 54 34.2		399
1990 SJ2	1990 10 15.61580	01 12 05.50	-01 54 36.9		399
1990 TN	1990 10 22.51840	01 36 30.71	+06 23 34.7	16	399
1990 TN	1990 10 22.53970	01 36 29.24	+06 23 34.4		399
1990 TN	1990 10 22.55660	01 36 28.07	+06 23 34.0		399
1990 TV	1990 10 19.60139	01 35 22.68	+09 05 53.7	16.5	399
1990 TV	1990 10 19.61597	01 35 21.90	+09 05 52.3		399
1990 TW	1990 10 19.63021	02 52 19.29	+10 59 05.7	14.5	399
1990 TW	1990 10 19.64410	02 52 18.56	+10 59 08.0		399
1990 TW	1990 10 22.52674	02 49 21.46	+11 07 41.0	14.5	399
1990 TW	1990 10 22.54271	02 49 20.17	+11 07 44.6		399
1990 TZ2	1990 10 16.59861	01 57 37.30	-09 54 18.1	16	399
1990 TZ2	1990 10 16.61354	01 57 36.42	-09 54 27.6		399
1990 TZ2	1990 10 16.63409	01 57 35.64	-09 54 36.0		399
1990 TZ2	1990 10 19.67361	01 55 11.69	-10 20 13.4	16.5	399
1990 TZ2	1990 10 22.58056	01 52 51.26	-10 42 33.9	16.5	399
1990 TZ2	1990 10 22.59931	01 52 50.21	-10 42 44.6		399
1990 TZ2	1990 10 22.61806	01 52 49.37	-10 42 50.6		399
1990 UE	1990 10 22.55660	01 26 23.42	+08 00 46.5	16.5	399
1990 UT *	1990 10 16.54525	01 34 18.09	+06 56 03.9	16.5	399
1990 UT	1990 10 16.55972	01 34 17.31	+06 56 02.7		399
1990 UT	1990 10 16.57743	01 34 16.53	+06 55 59.5		399
1990 UT	1990 10 19.61597	01 31 21.31	+06 44 29.6	16.5	399
1990 UT	1990 10 22.51840	01 28 34.96	+06 33 54.8	16.5	399
1990 UW	1990 10 15.52245	02 14 19.86	+18 33 39.1	16	399
1990 UW	1990 10 15.53819	02 14 19.04	+18 33 36.9		399
1990 UE1	1990 10 22.65208	02 12 34.95	+14 12 21.8	16	399
1990 UE1	1990 10 22.67257	02 12 33.72	+14 12 13.7		399
1990 UE1	1990 10 22.69132	02 12 32.76	+14 12 08.4		399
1990 UE1	1990 10 27.64855	02 08 18.63	+13 43 51.5	16	399
1990 UE1	1990 10 27.66383	02 08 17.68	+13 43 45.2		399
1990 UQ2	1990 11 12.50596	03 25 48.87	+21 23 25.7	16	399
1990 UQ2	1990 11 12.52431	03 25 47.44	+21 23 29.2		399
1990 UQ2	1990 11 12.53854	03 25 46.26	+21 23 32.6		399
1990 UQ2	1990 11 13.49063	03 24 38.82	+21 26 12.9	15.5	399

1990 UQ2	1990 11	13.50625	03 24	37.76	+21 26	17.0		399
1990 UR2 *	1990 10	16.65833	03 09	41.71	+39 15	30.7	16.5	399
1990 UR2	1990 10	16.67292	03 09	41.14	+39 15	34.0		399
1990 UR2	1990 10	16.68932	03 09	40.70	+39 15	35.8		399
1990 UR2	1990 10	19.71597	03 07	36.56	+39 22	37.0	16.5	399
1990 UR2	1990 10	19.73750	03 07	35.66	+39 22	40.4		399
1990 UR2	1990 11	11.57917	02 46	47.78	+39 00	51.0	16	399
1990 UR2	1990 11	11.59444	02 46	46.68	+39 00	45.0		399
1990 UR2	1990 11	11.61042	02 46	45.80	+39 00	43.1		399
1990 US2	1990 10	19.60139	01 33	20.79	+09 16	17.5	16.5	399
1990 US2	1990 10	19.61597	01 33	19.85	+09 16	08.2		399
1990 VK1 *	1990 11	12.50596	03 16	31.64	+20 33	30.6	16	399
1990 VK1	1990 11	12.52431	03 16	30.46	+20 33	25.8		399
1990 VK1	1990 11	12.53854	03 16	29.58	+20 33	25.3		399
1990 VK1	1990 11	13.49063	03 15	36.02	+20 31	10.2	16	399
1990 VK1	1990 11	13.50625	03 15	35.09	+20 31	07.3		399
1990 VK1	1990 11	21.47222	03 08	14.85	+20 11	09.5	16.5	399
1990 VK1	1990 11	21.48750	03 08	14.22	+20 11	08.3		399
1990 VK1	1990 11	24.52714	03 05	34.54	+20 03	13.0	16.5	399
1990 VK1	1990 11	24.54178	03 05	33.81	+20 03	12.0		399
1990 VL1 *	1990 11	12.50596	03 23	44.81	+20 31	57.2	16.5	399
1990 VL1	1990 11	12.52431	03 23	43.52	+20 31	47.7		399
1990 VL1	1990 11	12.53854	03 23	42.45	+20 31	37.7		399
1990 VL1	1990 11	13.49063	03 22	47.49	+20 23	22.2	16.5	399
1990 VL1	1990 11	13.50625	03 22	46.84	+20 23	13.8		399
1990 VL1	1990 11	17.49479	03 18	59.36	+19 48	37.4	16.5	399
1990 VL1	1990 11	17.51007	03 18	58.36	+19 48	27.4		399
1990 VL1	1990 11	21.47222	03 15	19.53	+19 14	08.2	16.5	399
1990 VL1	1990 11	21.48750	03 15	18.82	+19 14	02.1		399
1990 VL1	1990 11	24.52714	03 12	38.75	+18 48	05.9	16.5	399
1990 VL1	1990 11	24.54178	03 12	38.19	+18 47	59.8		399
1990 VM1 *	1990 11	12.50596	03 28	18.65	+21 28	57.6	16.5	399
1990 VM1	1990 11	12.52431	03 28	17.55	+21 28	44.6		399
1990 VM1	1990 11	12.53854	03 28	16.80	+21 28	35.2		399
1990 VM1	1990 11	13.49063	03 27	30.54	+21 16	40.4	16	399
1990 VM1	1990 11	13.50625	03 27	29.65	+21 16	29.3		399
1990 VM1	1990 11	21.50694	03 21	03.70	+19 35	08.0	16	399
1990 VM1	1990 11	21.52292	03 21	02.80	+19 34	54.2		399
1990 VM1	1990 11	24.55909	03 18	45.66	+18 56	48.6	16.5	399
1990 VM1	1990 11	24.57465	03 18	45.03	+18 56	38.4		399
1990 VN1 *	1990 11	12.56389	03 31	10.49	+21 05	02.5	16.5	399
1990 VN1	1990 11	12.58206	03 31	09.35	+21 05	03.4		399
1990 VN1	1990 11	12.59792	03 31	08.44	+21 05	05.5		399
1990 VN1	1990 11	13.49063	03 30	10.82	+21 05	55.5	16	399
1990 VN1	1990 11	13.50625	03 30	09.84	+21 05	57.8		399
1990 VN1	1990 11	21.50694	03 21	31.68	+21 11	49.3	16.5	399
1990 VN1	1990 11	21.52292	03 21	30.58	+21 11	49.1		399
1990 VN1	1990 11	24.55909	03 18	18.51	+21 13	12.9	16.5	399
1990 VN1	1990 11	24.57465	03 18	17.32	+21 13	15.8		399
1990 VO1 *	1990 11	12.56389	03 41	13.49	+19 45	10.8	16.5	399
1990 VO1	1990 11	12.58206	03 41	12.62	+19 45	07.0		399
1990 VO1	1990 11	12.59792	03 41	11.63	+19 45	02.5		399
1990 VO1	1990 11	13.53299	03 40	22.80	+19 40	43.1	16.5	399
1990 VO1	1990 11	13.54826	03 40	21.78	+19 40	41.0		399
1990 VO1	1990 11	21.50694	03 33	08.48	+19 02	28.0	16	399
1990 VO1	1990 11	21.52292	03 33	07.47	+19 02	23.7		399
1990 VO1	1990 11	24.55909	03 30	23.32	+18 47	35.0	16.5	399
1990 VO1	1990 11	24.57465	03 30	22.40	+18 47	27.9		399
1990 VA2 *	1990 11	12.56389	03 42	58.67	+18 34	36.5	16.5	399

1990 VA2	1990 11	12.58206	03 42	57.83	+18 34	29.8		399
1990 VA2	1990 11	12.59792	03 42	56.68	+18 34	23.2		399
1990 VD2	1990 11	12.56389	03 32	45.52	+18 18	46.0	16.5	399
1990 VD2	1990 11	12.58206	03 32	44.80	+18 18	47.1		399
1990 VD2	1990 11	12.59792	03 32	43.96	+18 18	42.4		399
1990 VD2	1990 11	17.49479	03 28	32.50	+18 02	32.7	16.5	399
1990 VD2	1990 11	17.51007	03 28	31.79	+18 02	30.3		399
1990 VX2	1990 11	17.57986	04 11	35.74	+28 08	15.5	15	399
1990 VX2	1990 11	17.59479	04 11	34.17	+28 08	37.9		399
1990 VX2	1990 11	17.61160	04 11	32.33	+28 09	01.9		399
1990 VX2	1990 11	19.52957	04 08	28.68	+28 52	11.2	14	399
1990 VX2	1990 11	19.54537	04 08	27.13	+28 52	29.6		399
1990 VO3 *	1990 11	13.58403	05 31	42.64	+18 53	08.3	16.5	399
1990 VO3	1990 11	13.60521	05 31	41.93	+18 53	04.7		399
1990 VO3	1990 11	17.63160	05 29	14.30	+18 36	18.5	16.5	399
1990 VO3	1990 11	17.64722	05 29	13.69	+18 36	14.8		399
1990 VO3	1990 11	21.57934	05 26	30.05	+18 19	43.4	16.5	399
1990 VO3	1990 11	21.59479	05 26	29.37	+18 19	39.6		399
1990 VQ3	1990 11	21.47222	03 15	56.61	+20 17	54.0	16.5	399
1990 VQ3	1990 11	21.48750	03 15	55.88	+20 17	49.3		399
1990 VV3 *	1990 11	12.45069	03 04	18.88	+20 30	51.7	16.5	399
1990 VV3	1990 11	12.46632	03 04	17.49	+20 30	46.0		399
1990 VV3	1990 11	12.48281	03 04	16.40	+20 30	44.0		399
1990 VV3	1990 11	13.45556	03 03	10.67	+20 26	36.3	16.5	399
1990 VV3	1990 11	13.47153	03 03	09.50	+20 26	32.0		399
1990 VV3	1990 11	24.60732	02 51	16.28	+19 37	42.4	16.5	399
1990 VV3	1990 11	24.62361	02 51	15.55	+19 37	38.6		399
1990 VW3 *	1990 11	12.50596	03 15	50.61	+18 59	41.3	16.5	399
1990 VW3	1990 11	12.52431	03 15	49.29	+18 59	39.9		399
1990 VW3	1990 11	12.53854	03 15	48.20	+18 59	39.5		399
1990 VW3	1990 11	13.49063	03 14	43.99	+18 59	27.0	16.5	399
1990 VW3	1990 11	13.50625	03 14	42.91	+18 59	28.8		399
1990 VW3	1990 11	21.47222	03 05	57.79	+18 56	33.1	16.5	399
1990 VW3	1990 11	21.48750	03 05	56.71	+18 56	30.6		399
1990 VW3	1990 11	24.52714	03 02	47.45	+18 55	10.2	16.5	399
1990 VW3	1990 11	24.54178	03 02	46.46	+18 55	10.2		399
1990 VX3 *	1990 11	12.50596	03 16	12.35	+19 22	59.9	16.5	399
1990 VX3	1990 11	12.52431	03 16	10.90	+19 22	57.7		399
1990 VX3	1990 11	12.53854	03 16	09.81	+19 22	55.8		399
1990 VX3	1990 11	13.49063	03 15	05.36	+19 20	23.0	16.5	399
1990 VX3	1990 11	13.50625	03 15	04.32	+19 20	19.6		399
1990 VX3	1990 11	24.52714	03 02	45.33	+18 49	01.8	16.5	399
1990 VX3	1990 11	24.54178	03 02	44.36	+18 48	57.7		399
1990 VY3 *	1990 11	12.50596	03 22	31.59	+20 50	54.5	16.5	399
1990 VY3	1990 11	12.52431	03 22	30.32	+20 50	47.8	16.5	399
1990 VY3	1990 11	12.53854	03 22	29.38	+20 50	41.4		399
1990 VY3	1990 11	13.49063	03 21	37.29	+20 44	14.3	16.5	399
1990 VY3	1990 11	13.50625	03 21	36.43	+20 44	09.7		399
1990 VY3	1990 11	21.47222	03 14	30.39	+19 49	40.6	16.5	399
1990 VY3	1990 11	21.48750	03 14	29.56	+19 49	35.9		399
1990 VY3	1990 11	24.52714	03 11	59.18	+19 28	57.6	16.5	399
1990 VY3	1990 11	24.54178	03 11	58.11	+19 28	51.5		399
1990 VA4 *	1990 11	13.49063	03 30	26.42	+21 37	40.1	16.5	399
1990 VA4	1990 11	13.50625	03 30	25.42	+21 37	33.3		399
1990 VA4	1990 11	21.50694	03 21	09.54	+20 28	21.2	16.5	399
1990 VA4	1990 11	21.52292	03 21	08.65	+20 28	16.3		399
1990 WT2 *	1990 11	21.61840	07 53	30.61	+31 58	44.0	16.5	399
1990 WT2	1990 11	21.63646	07 53	30.94	+31 58	48.0		399
1990 WT2	1990 11	21.65313	07 53	31.32	+31 58	50.6		399

1990 WT2	1990 11 24.70278	07 54 29.91	+32 09 05.1	16	399
1990 WT2	1990 11 24.71806	07 54 30.29	+32 09 08.8		399
944	1990 10 15.58021	00 59 53.15	-00 43 44.4	14	399
944	1990 10 15.59618	00 59 51.48	-00 43 35.3		399

400 Kitami

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Measurers K. Watanabe, H. Kaneda, T. Fujii

0.20-m f/4.0 reflector, 0.25-m f/3.4 reflector

AGK3, SAOC

1931 TU1	1990 09 16.65278	00 06 55.01	+01 22 42.8		400
1931 TU1	1990 09 16.66875	00 06 54.26	+01 22 35.0		400
1931 TU1	1990 10 17.58542	23 47 46.26	-02 40 06.5	16.5	400
1931 TU1	1990 10 17.60625	23 47 45.80	-02 40 15.0		400
1979 SJ11	1990 11 15.54444	01 24 31.24	+13 52 45.9	16.5	400
1979 SJ11	1990 11 15.56875	01 24 30.47	+13 52 40.5		400
1988 AK1	1990 11 15.54444	01 31 37.95	+16 00 56.0	16.5	400
1988 AK1	1990 11 15.56875	01 31 36.98	+16 00 50.1		400
1989 JC	1990 11 13.54410	03 43 54.86	+18 41 05.2	15.5	400
1989 JC	1990 11 13.55938	03 43 53.99	+18 40 44.1		400
1990 QH1	1990 09 16.57500	22 56 42.53	-06 07 48.4	16.0	400
1990 QH1	1990 09 16.59236	22 56 41.50	-06 07 50.0		400
1990 SZ1	1990 10 11.49653	23 59 58.28	-03 07 21.0	16.5	400
1990 SZ1	1990 10 11.52085	23 59 57.40	-03 07 40.2		400
1990 SZ1	1990 10 11.53681	23 59 56.91	-03 07 44.8		400
1990 SZ1	1990 10 15.56667	23 57 53.05	-03 47 52.3	16.0	400
1990 SZ1	1990 10 15.59028	23 57 51.99	-03 48 02.1		400
1990 SZ1	1990 10 24.49306	23 54 18.77	-05 05 52.2	16	400
1990 SZ1	1990 10 24.52778	23 54 18.04	-05 06 07.8		400
1990 SD4	1990 10 17.46875	22 17 50.04	-00 04 45.8	17	400
1990 SD4	1990 10 17.49653	22 17 49.89	-00 04 55.4		400
1990 SQ4	1990 10 15.57361	00 09 01.96	+00 56 15.1	16.5	400
1990 SQ4	1990 10 15.59861	00 09 00.98	+00 56 09.2		400
1990 SQ4	1990 10 22.51667	00 04 47.41	+00 30 02.6	16.5	400
1990 SQ4	1990 10 22.54097	00 04 46.72	+00 29 56.8		400
1990 SQ4	1990 10 24.49792	00 03 43.83	+00 23 32.5	16.5	400
1990 SQ4	1990 10 24.52500	00 03 42.81	+00 23 27.6		400
1990 TQ	1990 10 17.46493	00 10 01.44	+06 59 53.6	16.0	400
1990 TQ	1990 10 17.48090	00 10 00.74	+06 59 57.5		400
1990 TT	1990 10 22.47986	01 29 00.38	+13 05 10.6	16.5	400
1990 TT	1990 10 22.49653	01 28 59.53	+13 05 08.6		400
1990 TU	1990 10 22.47986	01 34 06.27	+10 39 55.4	16.0	400
1990 TU	1990 10 22.49653	01 34 05.45	+10 39 41.3		400
1990 TV	1990 10 22.47986	01 33 01.19	+08 55 32.9	16.0	400
1990 TV	1990 10 22.49653	01 33 00.51	+08 55 28.0		400
1990 TW	1990 10 21.64688	02 50 16.26	+11 05 06.3	14.5	400
1990 TW	1990 10 21.67118	02 50 14.53	+11 05 09.2		400
1990 TW	1990 10 24.50868	02 47 14.52	+11 13 36.1	14.5	400
1990 TW	1990 10 24.52396	02 47 13.45	+11 13 38.1		400
1990 TW	1990 11 13.47465	02 24 56.03	+12 14 59.0	15.0	400
1990 TW	1990 11 13.48993	02 24 55.07	+12 14 58.6		400
1990 TB1	1990 10 22.56458	01 25 39.65	+16 03 05.0	16.0	400
1990 TB1	1990 10 22.58889	01 25 38.08	+16 03 00.8		400
1990 TC1	1990 11 11.42049	01 47 13.91	+09 13 45.4	16.5	400
1990 TC1	1990 11 11.43576	01 47 13.36	+09 13 41.3		400
1990 TD1	1990 11 11.42049	01 54 32.60	+08 18 39.4	16.5	400
1990 TD1	1990 11 11.43576	01 54 32.22	+08 18 39.3		400

1990	TJ1	1990	11	11.45035	02	05	56.25	+07	49	16.9	15.5	400	
1990	TJ1	1990	11	11.46632	02	05	55.40	+07	49	15.6		400	
1990	TK1	1990	11	11.45035	02	09	04.59	+08	03	27.4	16.0	400	
1990	TK1	1990	11	11.46632	02	09	03.90	+08	03	24.0		400	
1990	TL1	1990	11	11.45035	02	10	29.57	+07	47	20.9	16.0	400	
1990	TL1	1990	11	11.46632	02	10	28.99	+07	47	11.9		400	
1990	TM1	1990	10	24.50868	02	42	06.05	+08	11	28.4	16.5	400	
1990	TM1	1990	10	24.52396	02	42	05.21	+08	11	26.9		400	
1990	TM1	1990	11	13.47465	02	26	36.53	+07	23	24.7	16.0	400	
1990	TM1	1990	11	13.48993	02	26	35.86	+07	23	23.1		400	
1990	TH3	*	1990	10	15.61319	02	58	00.02	+09	10	01.4	16.0	400
1990	TH3		1990	10	15.63125	02	57	59.05	+09	10	02.8		400
1990	TH3		1990	10	21.64688	02	52	40.66	+09	25	08.4	16.0	400
1990	TH3		1990	10	21.67118	02	52	39.38	+09	25	12.4		400
1990	TH3		1990	10	24.50868	02	49	54.31	+09	32	32.6	16.5	400
1990	TH3		1990	10	24.52396	02	49	53.37	+09	32	37.5		400
1990	TJ3	*	1990	10	15.61319	02	58	37.04	+08	42	37.6	16.0	400
1990	TJ3		1990	10	15.63125	02	58	36.15	+08	42	34.0		400
1990	TJ3		1990	10	21.64688	02	53	50.06	+08	24	57.7	16.0	400
1990	TJ3		1990	10	21.67118	02	53	48.52	+08	24	52.6		400
1990	TJ3		1990	10	24.50868	02	51	15.34	+08	16	46.8	16.0	400
1990	TJ3		1990	10	24.52396	02	51	14.30	+08	16	43.4		400
1990	TJ3		1990	11	13.47465	02	31	04.83	+07	37	17.1	16.0	400
1990	TJ3		1990	11	13.48993	02	31	04.10	+07	37	16.7		400
1990	TK3	*	1990	10	15.64410	02	55	41.03	+18	41	02.7	16.0	400
1990	TK3		1990	10	15.66146	02	55	40.09	+18	41	11.3		400
1990	TK3		1990	10	21.60521	02	49	28.57	+19	24	54.1	16.0	400
1990	TK3		1990	10	21.62118	02	49	27.54	+19	25	01.7		400
1990	TK3		1990	11	15.52257	02	18	33.48	+21	46	38.1	15.5	400
1990	TK3		1990	11	15.53785	02	18	32.40	+21	46	42.2		400
1990	TL3	*	1990	10	15.64410	03	02	48.28	+21	46	23.9	16.0	400
1990	TL3		1990	10	15.66146	03	02	47.64	+21	46	26.0		400
1990	TL3		1990	10	21.60521	02	58	53.08	+21	50	50.9	16.0	400
1990	TL3		1990	10	21.62118	02	58	52.25	+21	50	49.6		400
1990	TZ8	*	1990	10	10.53715	00	17	18.87	+05	10	23.0	16.0	400
1990	TZ8		1990	10	10.55382	00	17	17.89	+05	10	26.2		400
1990	TZ8		1990	10	10.57257	00	17	16.53	+05	10	27.0		400
1990	TZ8		1990	10	17.46493	00	10	24.24	+05	26	32.4	16.0	400
1990	TZ8		1990	10	17.48090	00	10	23.28	+05	26	34.0		400
1990	TW12		1990	11	11.46528	04	02	45.04	+28	45	44.4	17	400
1990	TW12		1990	11	11.48542	04	02	43.96	+28	45	52.5		400
1990	TW12		1990	11	13.48750	04	00	31.75	+28	57	41.4	16.5	400
1990	TW12		1990	11	13.50833	04	00	30.40	+28	57	45.0		400
1990	TW12		1990	11	13.52153	04	00	29.41	+28	57	50.7		400
1990	UB		1990	10	24.54583	01	41	07.32	+17	13	54.5	16.0	400
1990	UB		1990	10	24.56875	01	41	05.80	+17	13	47.3		400
1990	UB		1990	11	15.54444	01	23	44.05	+14	54	12.6	17	400
1990	UB		1990	11	15.56875	01	23	43.04	+14	54	01.9		400
1990	UF1	*	1990	10	22.54236	03	07	37.96	+14	33	44.1	16.0	400
1990	UF1		1990	10	22.56042	03	07	36.94	+14	33	44.0		400
1990	UF1		1990	10	24.53785	03	05	41.31	+14	31	13.8	16.0	400
1990	UF1		1990	10	24.55521	03	05	40.27	+14	31	13.3		400
1990	UF1		1990	11	13.50313	02	43	46.76	+14	00	45.1	16.0	400
1990	UF1		1990	11	13.51840	02	43	45.50	+14	00	46.9		400
1990	UG1	*	1990	10	22.54236	03	09	02.59	+14	24	12.6	16.0	400
1990	UG1		1990	10	22.56042	03	09	01.82	+14	24	04.6		400
1990	UG1		1990	10	24.53785	03	07	37.25	+14	06	46.8	16.0	400
1990	UG1		1990	10	24.55521	03	07	36.57	+14	06	37.1		400
1990	UG1		1990	11	13.50313	02	51	00.33	+11	02	50.5	16.0	400

1990	UG1	1990	11	13.51840	02	50	59.36	+11	02	40.3		400	
1990	UP1	*	1990	10	22.54236	03	08	34.98	+11	48	38.9	16.0	400
1990	UP1		1990	10	22.56042	03	08	33.88	+11	48	42.2		400
1990	UP1		1990	10	24.53785	03	06	46.57	+11	54	29.7	16.0	400
1990	UP1		1990	10	24.55521	03	06	45.82	+11	54	30.4		400
1990	UP1		1990	11	13.50313	02	44	59.50	+12	58	54.9	16.0	400
1990	UP1		1990	11	13.51840	02	44	58.40	+12	58	55.4		400
1990	UL2		1990	10	24.60174	03	34	51.69	+15	32	45.2	16.0	400
1990	UL2		1990	10	24.61910	03	34	51.14	+15	32	43.9		400
1990	UM2		1990	10	21.64688	02	50	43.25	+08	40	57.6	16.5	400
1990	UM2		1990	10	21.67118	02	50	42.35	+08	40	58.1		400
1990	UM2	*	1990	10	24.50868	02	48	17.53	+08	38	14.6	16.5	400
1990	UM2		1990	10	24.52396	02	48	16.63	+08	38	16.2		400
1990	UM2		1990	11	13.47465	02	30	21.45	+08	28	09.2	16.5	400
1990	UM2		1990	11	13.48993	02	30	20.88	+08	28	12.8		400
1990	US2	*	1990	10	22.47986	01	30	46.73	+08	51	12.7	16.0	400
1990	US2		1990	10	22.49653	01	30	45.84	+08	51	04.1		400
1990	UG3	*	1990	10	24.57326	03	19	21.85	+13	51	18.5	16.0	400
1990	UG3		1990	10	24.58924	03	19	21.16	+13	51	21.6		400
1990	UG3		1990	11	11.48646	03	05	07.23	+14	51	25.0	15.0	400
1990	UG3		1990	11	11.50174	03	05	06.32	+14	51	27.6		400
1990	UG3		1990	11	18.54826	02	58	43.08	+15	17	32.1	15.5	400
1990	UG3		1990	11	18.56354	02	58	41.99	+15	17	35.1		400
1990	UH3	*	1990	10	24.60174	03	30	14.00	+12	56	59.6	16.0	400
1990	UH3		1990	10	24.61910	03	30	13.51	+12	56	49.3		400
1990	UH3		1990	11	11.51563	03	17	06.02	+09	40	39.8	16.0	400
1990	UH3		1990	11	11.53090	03	17	05.20	+09	40	30.2		400
1990	UJ3	*	1990	10	24.57326	03	17	29.69	+15	07	25.3	16.5	400
1990	UJ3		1990	10	24.58924	03	17	28.88	+15	07	13.8		400
1990	UJ3		1990	11	11.48646	03	02	58.66	+11	55	12.0	16.5	400
1990	UJ3		1990	11	11.50174	03	02	57.69	+11	55	00.2		400
1990	VE		1990	11	11.58646	03	58	25.22	+17	23	15.8	16.0	400
1990	VE		1990	11	11.60243	03	58	24.23	+17	23	16.8		400
1990	VT1	*	1990	11	11.55660	03	45	05.65	+17	35	39.2	16.0	400
1990	VT1		1990	11	11.57396	03	45	04.75	+17	35	34.1		400
1990	VT1		1990	11	13.54410	03	43	15.54	+17	26	26.5	16.0	400
1990	VT1		1990	11	13.55938	03	43	14.66	+17	26	21.3		400
1990	VU1	*	1990	11	11.58646	04	02	17.63	+14	36	46.6	16.0	400
1990	VU1		1990	11	11.60243	04	02	16.81	+14	36	51.2		400
1990	VU1		1990	11	13.57326	04	01	04.75	+14	38	00.3	16.5	400
1990	VU1		1990	11	13.58924	04	01	04.26	+14	38	00.6		400
1990	VU1		1990	11	18.57674	03	57	57.52	+14	41	13.7	16.0	400
1990	VU1		1990	11	18.59021	03	57	56.86	+14	41	11.2		400
1990	VU1		1990	11	24.51493	03	54	12.45	+14	45	27.2	16.0	400
1990	VU1		1990	11	24.53021	03	54	11.93	+14	45	29.0		400
1990	VV1	*	1990	11	11.61563	04	11	56.66	+14	05	14.2	16.0	400
1990	VV1		1990	11	11.63299	04	11	55.86	+14	05	05.1		400
1990	VV1		1990	11	13.60313	04	10	18.62	+13	45	49.5	16.5	400
1990	VV1		1990	11	13.61840	04	10	17.83	+13	45	40.6		400
1990	VV1		1990	11	24.55104	04	00	35.67	+12	03	38.5	16.0	400
1990	VV1		1990	11	24.56632	04	00	34.60	+12	03	32.0		400
1990	VA2		1990	11	13.54410	03	41	52.95	+18	28	35.0	16.0	400
1990	VA2		1990	11	13.55938	03	41	52.00	+18	28	30.2		400
1990	VG2	*	1990	11	11.55660	03	49	25.02	+14	31	33.4	16.0	400
1990	VG2		1990	11	11.57396	03	49	24.22	+14	31	30.9		400
1990	VG2		1990	11	13.54410	03	47	39.18	+14	26	16.2	16.0	400
1990	VG2		1990	11	13.55938	03	47	38.21	+14	26	14.4		400
1990	VH2	*	1990	11	11.58646	03	59	13.78	+14	28	33.6	17	400
1990	VH2		1990	11	11.60243	03	59	13.19	+14	28	37.1		400

1990	VH2	1990	11	13.57326	03	58	18.03	+14	27	16.4	17	400	
1990	VH2	1990	11	13.58924	03	58	17.17	+14	27	12.5		400	
1990	VJ2	1990	11	13.53854	04	10	34.68	+22	18	03.1	16.0	400	
1990	VJ2	1990	11	13.55729	04	10	33.73	+22	17	56.4		400	
1990	VJ2	1990	11	15.58681	04	08	44.53	+22	08	48.4	16.0	400	
1990	VJ2	1990	11	15.60590	04	08	43.45	+22	08	43.2		400	
1990	VL2	1990	11	11.58646	03	57	02.11	+14	31	52.7	16.5	400	
1990	VL2	1990	11	11.60243	03	57	01.08	+14	31	51.8		400	
1990	VL2	*	1990	11	13.57326	03	55	11.91	+14	26	03.5	16.5	400
1990	VL2	1990	11	13.58924	03	55	11.01	+14	26	02.2		400	
1990	VL2	1990	11	21.49965	03	47	30.93	+14	04	13.1	16.5	400	
1990	VL2	1990	11	21.51701	03	47	30.07	+14	04	09.0		400	
1990	VM2	1990	11	11.58646	03	58	57.02	+14	12	21.5	17	400	
1990	VM2	1990	11	11.60243	03	58	56.05	+14	12	23.5		400	
1990	VM2	*	1990	11	13.57326	03	57	08.50	+14	09	54.5	16.0	400
1990	VM2	1990	11	13.58924	03	57	07.24	+14	09	53.8		400	
1990	VM2	1990	11	21.49965	03	49	35.79	+14	01	52.3	16.5	400	
1990	VM2	1990	11	21.51701	03	49	34.78	+14	01	50.2		400	
1990	VX2	*	1990	11	13.48333	04	17	39.52	+26	35	40.8	15.0	400
1990	VX2	1990	11	13.50556	04	17	37.80	+26	36	09.9		400	
1990	VX2	1990	11	13.52085	04	17	36.35	+26	36	32.3		400	
1990	VX2	1990	11	15.51181	04	14	44.69	+27	21	30.9	15.0	400	
1990	VX2	1990	11	15.53264	04	14	43.02	+27	21	59.1		400	
1990	VX2	1990	11	19.53819	04	08	27.82	+28	52	23.0	15.0	400	
1990	VX2	1990	11	19.55104	04	08	26.49	+28	52	38.2		400	
1990	VF3	*	1990	11	11.61563	04	07	10.85	+14	37	55.2	16.0	400
1990	VF3	1990	11	11.63299	04	07	09.63	+14	37	53.6		400	
1990	VF3	1990	11	13.60313	04	05	01.45	+14	34	27.0	16.5	400	
1990	VF3	1990	11	13.61840	04	05	00.50	+14	34	26.5		400	
1990	VF3	1990	11	18.57674	03	59	24.92	+14	26	23.5	16.5	400	
1990	VF3	1990	11	18.59021	03	59	23.88	+14	26	18.7		400	
1990	VF3	1990	11	24.51493	03	52	36.07	+14	18	18.5	16.0	400	
1990	VF3	1990	11	24.53021	03	52	35.00	+14	18	18.1		400	
1990	VG3	*	1990	11	11.61563	04	11	55.52	+12	48	21.7	16.5	400
1990	VG3	1990	11	11.63299	04	11	54.40	+12	48	17.5		400	
1990	VG3	1990	11	13.60313	04	09	55.73	+12	44	45.2	16.5	400	
1990	VG3	1990	11	13.61840	04	09	54.78	+12	44	44.4		400	
1990	VG3	1990	11	24.55104	03	58	04.92	+12	31	06.8	16.5	400	
1990	VG3	1990	11	24.56632	03	58	03.98	+12	31	03.4		400	
1990	VN3	1990	11	11.46528	03	57	30.99	+28	28	03.7	17.0	400	
1990	VN3	1990	11	11.48542	03	57	29.50	+28	28	01.1		400	
1990	VN3	*	1990	11	13.48750	03	55	04.70	+28	26	40.2	17.0	400
1990	VN3	1990	11	13.50833	03	55	03.02	+28	26	41.5		400	
1990	VP3	*	1990	11	13.61111	05	04	26.62	+35	23	51.2	17	400
1990	VP3	1990	11	13.63194	05	04	25.38	+35	23	50.6		400	
1990	VP3	1990	11	15.59583	05	02	36.69	+35	27	00.6	16.5	400	
1990	VP3	1990	11	15.61667	05	02	35.36	+35	27	02.5		400	
1990	VD4	*	1990	11	15.56146	04	27	00.50	+18	24	58.4	16.5	400
1990	VD4	1990	11	15.57882	04	26	59.72	+18	24	55.1		400	
1990	VD4	1990	11	18.60590	04	24	11.15	+18	15	53.1	16.5	400	
1990	VD4	1990	11	18.62326	04	24	10.22	+18	15	50.6		400	
1990	WQ2	*	1990	11	21.53924	04	39	10.79	+16	10	34.8	16.5	400
1990	WQ2	1990	11	21.55660	04	39	09.81	+16	10	29.7		400	
1990	WQ2	1990	11	24.58090	04	36	32.55	+15	53	10.3	16.0	400	
1990	WQ2	1990	11	24.59757	04	36	31.50	+15	53	03.1		400	
1990	WR2	*	1990	11	21.60104	04	59	56.59	+14	21	18.0	16.0	400
1990	WR2	1990	11	21.61840	04	59	55.60	+14	21	24.5		400	
1990	WR2	1990	11	24.64132	04	57	22.17	+14	35	16.0	16.0	400	
1990	WR2	1990	11	24.65729	04	57	21.45	+14	35	21.5		400	

1990	WS2 *	1990	11	21.60104	05	04	15.25	+17	38	48.3	16.0	400
1990	WS2	1990	11	21.61840	05	04	14.49	+17	38	47.2		400
1990	WS2	1990	11	24.64132	05	01	40.40	+17	33	29.0	16.0	400
1990	WS2	1990	11	24.65729	05	01	39.56	+17	33	23.4		400
	80	1990	11	13.50313	02	46	50.46	+13	21	55.9	10.0	400
	80	1990	11	13.51840	02	46	49.67	+13	21	46.7		400
	211	1990	10	17.46493	00	08	18.88	+07	01	19.5	12.0	400
	211	1990	10	17.48090	00	08	18.15	+07	01	14.5		400
	496	1990	11	13.50313	02	47	09.23	+13	36	59.1	14.0	400
	496	1990	11	13.51840	02	47	08.31	+13	36	55.1		400
	655	1990	11	21.60104	04	59	29.24	+13	57	21.9	14.0	400
	655	1990	11	21.61840	04	59	28.37	+13	57	21.0		400
	922	1990	11	11.58646	03	57	08.16	+14	16	58.9	15.0	400
	922	1990	11	11.60243	03	57	07.15	+14	16	55.2		400
	922	1990	11	13.57326	03	55	18.98	+14	05	31.1	15.0	400
	922	1990	11	13.58924	03	55	18.01	+14	05	24.9		400
1054		1990	11	18.60590	04	23	55.28	+14	34	31.6	14.0	400
1054		1990	11	18.62326	04	23	54.30	+14	34	32.8		400
1663		1990	11	13.50313	02	46	31.84	+09	16	01.4	13.5	400
1663		1990	11	13.51840	02	46	30.85	+09	16	02.5		400
2009		1990	10	24.50868	02	47	36.69	+12	00	02.8	15.0	400
2009		1990	10	24.52396	02	47	36.15	+11	59	59.8		400
2073		1990	10	19.48750	02	26	44.41	+10	29	38.6	16.0	400
2073		1990	10	19.50486	02	26	43.62	+10	29	35.5		400
2297		1990	10	22.54236	03	06	07.12	+15	12	58.9	16.5	400
2297		1990	10	22.56042	03	06	06.18	+15	12	55.4		400
2949		1990	11	24.55104	03	57	43.21	+12	08	03.6	16.0	400
2949		1990	11	24.56632	03	57	42.20	+12	07	59.5		400
3632		1990	11	11.48646	03	03	24.55	+11	17	50.5	13	400
3632		1990	11	11.50174	03	03	23.79	+11	17	42.3		400
3824		1990	11	15.54444	01	22	01.75	+14	34	32.9	15.5	400
3824		1990	11	15.56875	01	22	00.85	+14	34	27.7		400
4447		1990	10	24.50868	02	46	53.62	+11	57	14.5	16.5	400
4447		1990	10	24.52396	02	46	52.73	+11	57	07.8		400
4643		1990	09	16.57500	23	00	11.77	-09	42	27.7	16.5	400
4643		1990	09	16.59236	23	00	11.02	-09	42	30.9		400
4643		1990	10	11.52882	22	47	07.97	-10	50	51.8	16.5	400
4643		1990	10	11.54896	22	47	07.92	-10	50	51.7		400
4644		1990	10	15.53542	23	59	46.48	-16	31	59.6	16.5	400
4644		1990	10	15.55139	23	59	45.44	-16	31	58.0		400

402 Dynic Astronomical Observatory

A. Sugie, Dynic Astronomical Observatory, Taga 270, Taga-Cho, Inukami-Gun, Shiga-Ken, 522-03, Japan

Observer A. Sugie

Measurers A. Sugie, M. Koishikawa

0.25-m f/3.4 Schmidt, 0.60-m f/5.0 reflector

AGK3

1977	EM5	1990	10	28.65208	02	50	19.35	+02	48	26.8	17.5	402
1977	EM5	1990	10	28.66597	02	50	18.60	+02	48	18.6		402
1983	WL	1990	10	20.67292	03	19	34.34	+09	16	14.8	16.5	402
1983	WL	1990	10	20.69028	03	19	33.47	+09	16	14.8		402
1983	WL	1990	10	21.64722	03	18	45.63	+09	16	23.0		402
1983	WL	1990	10	21.66528	03	18	44.74	+09	16	24.0		402
1987	DJ	1990	10	20.67292	03	29	57.50	+08	03	11.1	17.5	402
1987	DJ	1990	10	20.69028	03	29	56.89	+08	03	10.9		402
1987	DJ	1990	10	21.64722	03	29	17.98	+08	01	52.3		402
1987	DJ	1990	10	21.66528	03	29	17.24	+08	01	50.9		402
1989	JC	1990	10	20.72847	04	03	44.21	+26	28	04.4	16.5	402

1989 JC	1990 10	21.70347	04 03	20.28	+26 13	10.8		402
1989 JC	1990 10	21.72083	04 03	19.82	+26 12	59.0		402
1990 TK3	1990 10	20.63750	02 50	32.72	+19 18	01.2	16.5	402
1990 TK3	1990 10	20.65486	02 50	31.64	+19 18	09.2		402
1990 TK3	1990 10	21.61736	02 49	27.58	+19 25	00.9		402
1990 TK3	1990 10	21.63623	02 49	26.35	+19 25	08.9		402
1990 TL3	1990 10	20.63750	02 59	35.42	+21 50	35.3		402
1990 TL3	1990 10	20.65486	02 59	34.67	+21 50	35.9		402
1990 UX	1990 10	19.62500	02 50	51.27	+04 36	16.6	17.0	402
1990 UX	1990 10	19.63958	02 50	50.64	+04 36	14.1		402
1990 UX *	1990 10	20.61042	02 50	11.84	+04 29	44.9	17.0	402
1990 UX	1990 10	20.62778	02 50	11.34	+04 29	38.2		402
1990 UX	1990 10	21.56319	02 49	33.13	+04 23	25.7		402
1990 UX	1990 10	21.58125	02 49	32.35	+04 23	18.0		402
1990 UY	1990 10	19.62500	03 00	34.78	+03 45	13.8	16.5	402
1990 UY	1990 10	19.63958	03 00	34.10	+03 45	07.7		402
1990 UY *	1990 10	20.61042	02 59	56.48	+03 38	13.6	16.0	402
1990 UY	1990 10	20.62778	02 59	55.72	+03 38	05.3		402
1990 UY	1990 10	21.56319	02 59	18.79	+03 31	27.6		402
1990 UY	1990 10	21.58125	02 59	17.98	+03 31	20.8		402
1990 UY	1990 10	28.65208	02 54	17.26	+02 43	02.7		402
1990 UY	1990 10	28.66597	02 54	16.58	+02 42	56.9		402
1990 UZ	1990 10	15.66597	03 10	08.17	+04 27	50.7	17.0	402
1990 UZ	1990 10	15.68542	03 10	07.37	+04 27	50.6		402
1990 UZ	1990 10	19.62500	03 07	22.52	+04 19	01.5	16.5	402
1990 UZ	1990 10	19.63958	03 07	21.85	+04 18	59.8		402
1990 UZ *	1990 10	20.61042	03 06	38.78	+04 16	54.8	16.5	402
1990 UZ	1990 10	20.62778	03 06	37.95	+04 16	52.6		402
1990 UZ	1990 10	21.56319	03 05	55.38	+04 14	54.2		402
1990 UZ	1990 10	21.58125	03 05	54.69	+04 14	52.1		402
1990 UZ	1990 10	28.65208	03 00	11.27	+04 01	50.0		402
1990 UZ	1990 10	28.66597	03 00	10.47	+04 01	48.7		402
1990 UZ	1990 11	13.60000	02 46	13.35	+03 48	54.0	16.5	402
1990 UZ	1990 11	13.61389	02 46	12.60	+03 48	54.2		402
1990 UA1	1990 10	19.65174	03 02	26.41	+22 58	53.0	16.5	402
1990 UA1	1990 10	19.66667	03 02	25.68	+22 58	47.4		402
1990 UA1 *	1990 10	20.63750	03 01	46.32	+22 52	03.9	16.5	402
1990 UA1	1990 10	20.65486	03 01	45.70	+22 51	56.6		402
1990 UA1	1990 10	21.61736	03 01	05.48	+22 45	04.5		402
1990 UA1	1990 10	21.63623	03 01	04.63	+22 44	57.8		402
1990 UA1	1990 10	28.67778	02 55	40.90	+21 49	57.5	16.5	402
1990 UA1	1990 10	28.69317	02 55	40.01	+21 49	50.7		402
1990 UA1	1990 11	24.60833	02 33	23.17	+17 32	59.8	16.0	402
1990 UA1	1990 11	24.62500	02 33	22.45	+17 32	49.8		402
1990 UB1	1990 10	19.65174	03 08	32.53	+21 26	31.8	16.5	402
1990 UB1	1990 10	19.66667	03 08	31.92	+21 26	35.2		402
1990 UB1 *	1990 10	20.63750	03 07	45.12	+21 29	41.8	16.5	402
1990 UB1	1990 10	20.65486	03 07	44.34	+21 29	46.5		402
1990 UB1	1990 10	21.61736	03 06	56.82	+21 32	47.1		402
1990 UB1	1990 10	21.63623	03 06	55.99	+21 32	50.7		402
1990 UB1	1990 10	28.67778	03 00	38.45	+21 52	22.1	16.5	402
1990 UB1	1990 10	28.69317	03 00	37.43	+21 52	24.2		402
1990 UB1	1990 11	24.66667	02 34	14.79	+22 28	32.1	16.0	402
1990 UB1	1990 11	24.68410	02 34	13.88	+22 28	32.3		402
1990 UL1 *	1990 10	20.67292	03 17	21.64	+09 16	52.7	16.0	402
1990 UL1	1990 10	20.69028	03 17	20.98	+09 16	50.0		402
1990 UL1	1990 10	21.64722	03 16	42.27	+09 13	45.5		402
1990 UL1	1990 10	21.66528	03 16	41.55	+09 13	40.6		402
1990 UL1	1990 10	28.70208	03 11	09.75	+08 51	58.1	16.5	402

1990	UL1		1990	10	28.71597	03	11	08.94	+08	51	56.3		402
1990	UM1	*	1990	10	20.67292	03	18	35.11	+07	51	36.4	16.5	402
1990	UM1		1990	10	20.69028	03	18	34.42	+07	51	26.3		402
1990	UM1		1990	10	21.64722	03	17	58.15	+07	40	21.0		402
1990	UM1		1990	10	21.66528	03	17	57.37	+07	40	09.5		402
1990	UN1	*	1990	10	20.67292	03	24	03.39	+10	32	46.5	17.0	402
1990	UN1		1990	10	20.69028	03	24	02.97	+10	32	43.1		402
1990	UN1		1990	10	21.64722	03	23	35.32	+10	26	06.5		402
1990	UN1		1990	10	21.66528	03	23	34.73	+10	26	01.4		402
1990	UN1		1990	10	28.70208	03	19	21.64	+09	36	33.4	16.0	402
1990	UN1		1990	10	28.71597	03	19	21.24	+09	36	31.0		402
1990	UN1		1990	11	13.65069	03	06	21.57	+07	50	50.7	16.5	402
1990	UN1		1990	11	13.66875	03	06	20.51	+07	50	45.2		402
1990	UO1	*	1990	10	20.67292	03	26	30.52	+09	25	16.5	17.5	402
1990	UO1		1990	10	20.69028	03	26	29.70	+09	25	10.8		402
1990	UO1		1990	10	21.64722	03	25	53.43	+09	21	12.2		402
1990	UO1		1990	10	21.66528	03	25	52.46	+09	21	09.4		402
1990	UO1		1990	11	13.65069	03	06	32.05	+07	57	22.9	17.0	402
1990	UO1		1990	11	13.66875	03	06	31.00	+07	57	20.7		402
1990	UJ2	*	1990	10	20.70069	03	59	11.72	+12	19	07.6	16.5	402
1990	UJ2		1990	10	20.71806	03	59	11.22	+12	19	05.6		402
1990	UJ2		1990	10	21.67569	03	58	41.77	+12	15	44.2		402
1990	UJ2		1990	10	21.69306	03	58	41.20	+12	15	41.8		402
1990	UK2	*	1990	10	20.72847	04	11	30.06	+26	26	59.3	17.5	402
1990	UK2		1990	10	20.74653	04	11	29.41	+26	26	59.4		402
1990	UK2		1990	10	21.70347	04	11	05.48	+26	24	29.9	16.5	402
1990	UK2		1990	10	21.72083	04	11	04.85	+26	24	26.2		402
1990	UY2	*	1990	10	19.65174	02	52	56.61	+20	15	55.6	17.5	402
1990	UY2		1990	10	19.66667	02	52	56.31	+20	15	41.3		402
1990	UY2		1990	10	20.63750	02	52	21.57	+19	59	32.7		402
1990	UY2		1990	10	20.65486	02	52	21.09	+19	59	20.9		402
1990	UZ2	*	1990	10	19.65174	02	55	44.22	+23	21	39.9	17.5	402
1990	UZ2		1990	10	19.66667	02	55	43.24	+23	21	33.7		402
1990	UZ2		1990	10	20.63750	02	55	08.56	+23	19	04.0		402
1990	UZ2		1990	10	20.65486	02	55	07.81	+23	18	59.8		402
1990	UA3	*	1990	10	19.65174	02	57	30.87	+21	00	18.6	17.5	402
1990	UA3		1990	10	19.66667	02	57	29.46	+21	00	09.4		402
1990	UA3		1990	10	20.63750	02	56	47.67	+20	55	04.0		402
1990	UA3		1990	10	20.65486	02	56	46.92	+20	55	01.0		402
1990	UA3		1990	11	24.60833	02	29	38.40	+17	01	30.2	17.5	402
1990	UA3		1990	11	24.62500	02	29	37.66	+17	01	26.6		402
1990	UB3	*	1990	10	19.65174	03	01	58.23	+20	29	06.7	17.0	402
1990	UB3		1990	10	19.66667	03	01	57.64	+20	29	05.5		402
1990	UB3		1990	10	20.63750	03	01	12.93	+20	28	08.0	17.0	402
1990	UB3		1990	10	20.65486	03	01	12.11	+20	28	06.8		402
1990	UB3		1990	11	24.60833	02	26	54.34	+18	40	45.1	16.5	402
1990	UB3		1990	11	24.62500	02	26	53.41	+18	40	40.9		402
1990	UC3	*	1990	10	19.65174	03	02	08.22	+23	11	40.7	17.0	402
1990	UC3		1990	10	19.66667	03	02	07.50	+23	11	40.6		402
1990	UC3		1990	10	20.63750	03	01	23.95	+23	09	04.4		402
1990	UC3		1990	10	20.65486	03	01	23.11	+23	09	01.6		402
1990	UC3		1990	11	24.60833	02	31	36.06	+20	39	27.2	17.5	402
1990	UC3		1990	11	24.62500	02	31	35.27	+20	39	20.6		402
1990	UD3	*	1990	10	19.65174	03	05	27.22	+20	08	12.9	16.5	402
1990	UD3		1990	10	19.66667	03	05	26.73	+20	08	06.2		402
1990	UD3		1990	10	20.63750	03	04	53.14	+20	00	22.9		402
1990	UD3		1990	10	20.65486	03	04	52.42	+20	00	14.4		402
1990	UD3		1990	11	15.56181	02	45	50.88	+16	02	03.1	16.5	402
1990	UD3		1990	11	15.57847	02	45	50.22	+16	01	54.5		402

1990 VM	1990 10	19.62500	02 59	50.31	+03 06	43.4	17.0	402
1990 VM	1990 10	19.63958	02 59	49.68	+03 06	40.1		402
1990 VM	1990 10	20.61042	02 59	10.90	+03 02	44.6		402
1990 VM	1990 10	20.62778	02 59	10.25	+03 02	41.4		402
1990 VM	1990 10	28.65208	02 53	21.45	+02 33	00.3	17.0	402
1990 VM	1990 10	28.66597	02 53	20.56	+02 32	56.6		402
1990 VT2 *	1990 11	15.59236	03 27	40.79	+01 56	29.7	17.0	402
1990 VT2	1990 11	15.60903	03 27	39.77	+01 56	24.7		402
1990 VT2	1990 11	16.59514	03 26	45.05	+01 50	46.8		402
1990 VT2	1990 11	16.61042	03 26	44.17	+01 50	41.0		402
1990 VU2 *	1990 11	15.59236	03 28	30.99	+01 18	44.6	15.0	402
1990 VU2	1990 11	15.60903	03 28	29.94	+01 18	48.6		402
1990 VU2	1990 11	16.59514	03 27	28.42	+01 22	10.2		402
1990 VU2	1990 11	16.61042	03 27	27.47	+01 22	14.9		402
1990 VD3	1990 11	24.60833	02 29	41.73	+18 57	01.0	17.5	402
1990 VD3	1990 11	24.62500	02 29	40.82	+18 56	55.5		402
1990 VK3 *	1990 11	15.61944	04 27	18.73	+06 53	57.9	17.0	402
1990 VK3	1990 11	15.63681	04 27	17.76	+06 53	54.8		402
1990 VK3	1990 11	16.62083	04 26	25.23	+06 51	34.3		402
1990 VK3	1990 11	16.63750	04 26	24.33	+06 51	32.4		402
1990 VL3	1990 11	15.64722	04 36	23.59	+11 42	38.8	16.0	402
1990 VL3	1990 11	15.66389	04 36	22.64	+11 42	40.7		402
1990 VL3	1990 11	16.64792	04 35	29.28	+11 44	20.3		402
1990 VL3	1990 11	16.66528	04 35	28.24	+11 44	22.4		402
1990 VM3 *	1990 11	15.64722	04 27	06.59	+10 18	44.5	17.0	402
1990 VM3	1990 11	15.66389	04 27	05.23	+10 18	56.9		402
1990 VM3	1990 11	16.64792	04 25	55.66	+10 28	16.0		402
1990 VM3	1990 11	16.66528	04 25	54.43	+10 28	25.6		402
1597	1990 11	15.61944	04 30	24.29	+04 32	01.8	17.0	402
1597	1990 11	15.63681	04 30	23.61	+04 31	58.8		402
1597	1990 11	16.62083	04 29	37.15	+04 28	11.0		402
1597	1990 11	16.63750	04 29	36.40	+04 28	07.5		402

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

Observers Y. Mizuno, T. Furuta

Measurer T. Furuta

1990 TG3 *	1990 10	10.49074	01 26	26.09	+10 32	53.0	15.5	403
1990 TG3	1990 10	10.51319	01 26	24.80	+10 32	40.3		403
1990 TG3	1990 10	19.61910	01 18	52.36	+08 58	39.7		403
1990 TG3	1990 10	19.63021	01 18	51.53	+08 58	33.2		403
1990 UJ2	1990 11	12.58125	03 41	32.36	+11 02	00.4	16.5	403
1990 UJ2	1990 11	14.59340	03 39	37.12	+10 56	21.7		403
1990 UJ2	1990 11	14.62095	03 39	35.4	+10 56	15		403
1990 UQ2	1990 11	15.59861	03 22	08.6	+21 31	52	16.5	403
1990 UQ2	1990 11	15.60938	03 22	08.0	+21 31	52		403
1990 UQ2	1990 11	16.54549	03 21	01.8	+21 34	14		403
1990 UQ2	1990 11	16.55764	03 21	00.9	+21 34	14		403
1990 UE3	1990 11	14.60903	04 01	17.0	+24 05	03	15.5	403
1990 UE3	1990 11	14.63368	04 01	15.6	+24 05	04		403
1990 UE3	1990 11	15.62257	04 00	24.4	+24 04	53		403
1990 UE3	1990 11	15.63333	04 00	23.85	+24 04	53.7		403
1990 UG3	1990 11	14.53079	03 02	19.8	+15 02	25	16.0	403
1990 UG3	1990 11	14.54977	03 02	18.3	+15 02	31		403
1990 UG3	1990 11	15.57326	03 01	22.63	+15 06	18.9		403
1990 UG3	1990 11	15.58403	03 01	21.93	+15 06	22.0		403
1990 VZ	1990 11	15.59861	03 29	51.75	+20 00	05.6	16.5	403
1990 VZ	1990 11	15.60938	03 29	51.13	+20 00	04.4		403
1990 VZ	1990 11	16.54549	03 29	02.00	+19 58	40.0		403

1990 VZ	1990 11	16.55764	03 29	01.30	+19 58	36.2		403
1990 VM1	1990 11	15.59861	03 25	47.11	+20 50	11.4	16.5	403
1990 VM1	1990 11	15.60938	03 25	46.57	+20 50	03.7		403
1990 VM1	1990 11	16.54549	03 25	01.03	+20 38	12.2		403
1990 VM1	1990 11	16.55764	03 25	00.41	+20 38	01.8		403
1990 VN1	1990 11	15.59861	03 27	54.01	+21 07	52.6	16.5	403
1990 VN1	1990 11	15.60938	03 27	53.2	+21 07	53		403
1990 VN1	1990 11	16.54549	03 26	52.3	+21 08	39		403
1990 VN1	1990 11	16.55764	03 26	51.7	+21 08	39		403
1990 VO1	1990 11	14.57118	03 39	27.3	+19 35	58		403
1990 VO1	1990 11	14.58194	03 39	26.7	+19 35	53		403
1990 VU1	1990 11	16.59444	03 59	12.43	+14 39	53.5	16.5	403
1990 VU1	1990 11	16.60521	03 59	11.87	+14 39	52.5		403
1990 VA2	1990 11	14.57118	03 40	43.4	+18 22	13		403
1990 VA2	1990 11	14.58194	03 40	42.4	+18 22	08		403
1990 VB2 *	1990 11	14.53079	03 02	03.6	+13 59	04	15.5	403
1990 VB2	1990 11	14.54977	03 02	02.1	+13 58	41		403
1990 VB2	1990 11	15.57326	03 01	02.0	+13 42	07		403
1990 VB2	1990 11	15.58403	03 01	01.40	+13 41	56.7		403
1990 VF3	1990 11	16.59444	04 01	40.55	+14 29	28.8	16.5	403
1990 VF3	1990 11	16.60521	04 01	39.94	+14 29	25.9		403
1990 VF4 *	1990 11	15.59861	03 26	40.2	+18 28	02	16.5	403
1990 VF4	1990 11	15.60938	03 26	39.4	+18 28	01		403
1990 VF4	1990 11	16.54549	03 25	44.4	+18 27	09		403
1990 VF4	1990 11	16.55764	03 25	43.5	+18 27	08		403
4184	1990 11	16.57188	04 01	12.01	+29 01	53.4		403
4256	1990 11	23.59444	05 14	42.96	+23 02	03.0	16.5	403
4256	1990 11	23.60868	05 14	42.10	+23 02	02.1		403

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Measurer K. Watanabe

Long. and Parallax 138.17, -346, -249 (see MPC 16637)

1990 UK3 *	1990 10	22.65440	01 58	28.14	+21 13	45.3	16.0	408
1990 UK3	1990 10	22.66898	01 58	27.49	+21 13	40.0		408
1990 UK3	1990 11	11.62951	01 42	51.58	+18 40	35.5	16.0	408
1990 UK3	1990 11	11.64340	01 42	51.20	+18 40	27.0		408
1990 UK3	1990 11	11.66424	01 42	50.36	+18 40	15.1		408
1990 UK3	1990 11	12.60868	01 42	14.90	+18 33	05.1	16.0	408
1990 UK3	1990 11	12.62951	01 42	14.19	+18 32	53.6		408
1990 UK3	1990 11	12.64236	01 42	13.63	+18 32	48.2		408
1990 UK3	1990 11	17.51765	01 39	26.88	+17 56	15.6	16.5	408
1990 UK3	1990 11	17.53857	01 39	26.18	+17 56	09.0		408
1990 UK3	1990 11	17.55619	01 39	25.35	+17 56	00.3		408
1990 VO2 *	1990 11	11.62951	01 49	07.79	+19 06	34.8	16.0	408
1990 VO2	1990 11	11.66424	01 49	06.03	+19 06	30.1		408
1990 VO2	1990 11	12.60868	01 48	18.59	+19 02	38.5	16.0	408
1990 VO2	1990 11	12.62951	01 48	17.54	+19 02	33.2		408
1990 VO2	1990 11	12.64236	01 48	16.84	+19 02	26.9		408
1990 VO2	1990 11	17.51765	01 44	35.81	+18 42	50.8	16.5	408
1990 VO2	1990 11	17.53857	01 44	34.86	+18 42	48.4		408
1990 VO2	1990 11	17.55619	01 44	34.06	+18 42	40.0		408

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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 Telescope and Uppsala Southern Schmidt

1936 YD	1990 11 12.52212	01 39 31.35	-09 47 39.2				413
1936 YD	1990 11 13.53648	01 38 47.04	-09 42 05.6			R	413
1967 GM1	1990 11 19.44441	01 01 15.21	-07 41 03.6		17.5V		413
1967 GM1	1990 11 19.49649	01 01 13.97	-07 40 54.0				413
1975 XH	1990 10 20.63919	03 39 14.29	+04 59 06.9				413
1975 XH	1990 10 20.69475	03 39 12.05	+04 58 57.2			p	413
1977 EM5	1990 11 08.58392	02 42 10.13	+00 59 15.6				413
1977 EM5	1990 11 09.59679	02 41 24.66	+00 50 38.3				413
1977 QF1	1990 10 27.41579	22 59 54.76	-02 37 43.9		16	V	413
1977 QF1	1990 10 27.47829	22 59 55.34	-02 38 02.6				413
1977 TQ6	1990 11 12.44899	00 09 40.76	-11 20 46.6				413
1981 DZ1	1990 10 20.63919	03 46 35.10	+08 00 01.4			F	413
1981 DZ1	1990 10 20.69475	03 46 33.72	+07 59 38.6			F	413
1981 WE1	1990 10 16.53869	22 50 59.50	-00 27 22.5				413
1981 WE1	1990 10 27.41579	22 53 06.53	-01 56 25.1		16	V	413
1981 WE1	1990 10 27.47829	22 53 07.74	-01 56 50.9				413
1982 BQ4	1990 11 12.44899	00 26 30.93	-11 44 02.5				413
1982 UU5	1990 10 09.48778	22 50 50.63	-00 11 55.4				413
1982 UU5	1990 10 09.53986	22 50 49.27	-00 12 06.7				413
1982 UU5	1990 10 11.49659	22 50 04.83	-00 20 31.7				413
1982 UU5	1990 10 27.44704	22 47 53.54	-01 09 42.5				413
1983 VQ1	1990 10 10.59517	01 09 43.59	-39 28 24.5				413
1983 VQ1	1990 10 10.60906	01 09 42.27	-39 28 15.0				413
1985 CA2	1990 11 20.49956	01 56 05.13	+02 00 51.0		16	V	413
1985 CA2	1990 11 23.62049	01 54 13.99	+02 01 21.9				413
1986 JS	1986 04 02.65829	15 10 26.47	-05 51 18.1				413
1986 JS	1986 04 02.72079	15 10 25.54	-05 50 57.2				413
1986 QQ2	1990 11 08.58392	02 39 47.20	+00 51 59.2				413
1986 QQ2	1990 11 09.59679	02 38 49.90	+00 48 18.7				413
1986 QA6 *	1986 08 26.47635	20 28 53.42	-09 13 57.7		16	V	413
1986 QA6	1986 08 26.52149	20 28 52.00	-09 14 13.0				413
1987 CJ	1990 10 20.63919	03 40 24.90	+05 07 15.1				413
1987 CJ	1990 10 20.69475	03 40 23.23	+05 06 59.0				413
1988 CH2	1990 10 09.62698	02 39 31.37	+01 44 12.6		17	V	413
1988 CH2	1990 10 09.68948	02 39 28.96	+01 43 46.2				413
1988 CH2	1990 11 20.49956	02 05 15.55	-01 10 22.1				413
1988 CH2	1990 11 23.63446	02 03 30.60	-01 06 05.4				413
1988 ED	1990 10 27.44704	22 56 08.59	+01 30 10.4				413
1988 HB	1990 11 12.52212	01 35 49.55	-10 41 39.1				413
1988 HB	1990 11 13.52617	01 35 12.48	-10 39 43.9			R	413
1988 HB	1990 11 13.53648	01 35 12.16	-10 39 43.9			R	413
1990 PA	1979 03 24.58634	12 06 46.58	+17 53 52.6				413
1990 PA	1988 01 24.73729	12 50 47.18	+10 08 12.2				413
1990 PA	1990 11 08.58392	02 50 08.00	+00 05 37.5				413
1990 PA	1990 11 09.59679	02 49 08.61	+00 08 05.9				413
1990 QY	1990 10 09.48778	22 45 25.96	-02 40 49.1		17	V	413
1990 QY	1990 10 09.53986	22 45 24.96	-02 41 04.8				413
1990 QY	1990 10 11.49659	22 44 53.37	-02 52 26.6				413
1990 QA1	1990 10 09.48778	22 49 17.21	-02 08 45.0		17	V	413
1990 QA1	1990 10 09.53986	22 49 16.28	-02 08 56.8				413
1990 QA1	1990 10 11.49659	22 48 50.78	-02 17 44.9				413
1990 QQ1	1990 10 09.48778	22 46 11.68	-02 30 57.4		17.5V		413
1990 QQ1	1990 10 09.53986	22 46 09.74	-02 30 55.3				413
1990 QQ1	1990 10 11.49659	22 45 00.46	-02 30 38.6				413
1990 QD3	1990 10 09.51382	22 48 43.94	-02 00 30.1		17.5V		413

1990 QD3	1990 10	11.49659	22 48	10.96	-01 56	28.0		413
1990 QH3	1990 10	09.51382	22 42	57.01	+02 54	22.0	17.5V	413
1990 QH3	1990 10	11.49659	22 41	58.94	+03 07	19.3		413
1990 SB	1990 11	19.47045	00 48	27.76	-05 18	11.7		413
1990 SK	1976 09	14.38598	19 13	21.78	-61 06	58.0	17.5V	413
1990 SK	1976 09	14.42765	19 13	24.65	-61 06	20.5		413
1990 SK	1990 11	06.45001	23 10	15.04	-34 07	14.5		413
1990 SL	1990 11	22.44245	23 45	45.65	-33 46	49.0		F 413
1990 SB2	1990 10	20.48267	00 13	37.28	-27 25	03.6	16.5V	p 413
1990 SB2	1990 10	20.54517	00 13	36.04	-27 25	43.6		413
1990 SW3	1990 11	12.49608	01 48	39.81	-07 03	23.9	16.5V	413
1990 SW3	1990 11	12.54816	01 48	37.64	-07 03	15.0		413
1990 SW3	1990 11	13.60633	01 47	53.14	-07 00	04.8		413
1990 SK4	1990 07	25.61855	19 37	40.15	-54 56	23.6	15 V	413
1990 SK4	1990 09	28.69057	20 15	23.22	-48 39	08.2		F 413
1990 SK4	1990 10	13.42118	20 44	04.20	-44 35	06.4		413
1990 SK4	1990 10	16.50962	20 50	21.51	-43 39	48.8		413
1990 SK4	1990 11	06.43907	21 33	52.82	-36 57	53.1		413
1990 SS4	1989 05	28.39034	11 45	49.66	+02 42	45.8	18 V	413
1990 SS4	1990 10	18.47975	22 11	11.65	-15 05	52.2		413
1990 TB	1990 10	27.41579	22 49	02.48	-01 07	21.4		413
1990 TB	1990 10	27.47829	22 49	06.24	-01 07	42.2		413
1990 TF	1990 10	16.52494	22 39	49.72	+01 50	20.0		413
1990 TF	1990 11	12.50014	22 43	39.68	+03 08	36.5		413
1990 TF	1990 11	13.47069	22 44	12.62	+03 12	47.6		413
1990 TH	1990 10	16.62822	01 26	01.23	+05 32	07.1		413
1990 TJ	1990 10	16.64413	01 30	28.24	+04 29	35.0		413
1990 TJ	1990 10	28.70084	01 19	18.45	+03 53	43.0		413
1990 TK	1990 10	16.62822	01 27	27.66	+07 37	34.2		V 413
1990 TL	1990 10	16.64413	01 32	24.33	+04 12	41.9		413
1990 TL	1990 10	28.70084	01 19	56.85	+04 26	40.6		413
1990 TL	1990 11	13.50553	01 08	30.01	+05 13	55.5		413
1990 TM	1990 10	16.64413	01 40	27.60	+04 03	41.7		V 413
1990 TN	1990 10	16.65616	01 42	55.13	+06 30	40.8		413
1990 TN	1990 10	28.71177	01 29	48.50	+06 18	13.5	16.5V	413
1990 TN	1990 11	13.51782	01 15	14.68	+06 20	08.8		413
1990 TO	1990 09	23.67455	02 03	31.06	+02 35	39.6	16 V	413
1990 TO	1990 10	28.72106	01 33	28.31	+01 31	47.5		413
1990 TO	1990 11	12.56160	01 22	26.33	+01 57	29.7	16 V	413
1990 TY	1990 11	08.49243	01 07	25.02	-11 19	39.7		413
1990 TY	1990 11	08.55146	01 07	23.10	-11 20	23.5		413
1990 TZ2	1990 11	12.49608	01 37	31.08	-12 06	33.9	16.5V	413
1990 TZ2	1990 11	12.54816	01 37	29.16	-12 06	35.0		413
1990 TZ2	1990 11	13.52617	01 36	55.53	-12 06	59.7		R 413
1990 TM4 *	1990 10	09.62698	02 46	24.27	+03 07	12.3	17.5V	F 413
1990 TM4	1990 10	09.68948	02 46	22.75	+03 06	32.0		F 413
1990 TM4	1990 10	20.55747	02 40	35.55	+00 53	15.6		413
1990 TM4	1990 10	20.61302	02 40	33.41	+00 52	39.2		413
1990 TN4 *	1990 10	09.62698	02 47	29.36	+01 14	05.2	17 V	413
1990 TN4	1990 10	09.68948	02 47	26.95	+01 13	56.9		413
1990 TN4	1990 10	20.55747	02 39	44.68	+00 45	23.7		413
1990 TN4	1990 10	20.61302	02 39	42.17	+00 45	17.3		413
1990 TN4	1990 10	22.69501	02 38	04.59	+00 40	29.7		413
1990 TN4	1990 10	29.54743	02 32	31.85	+00 27	08.0		V 413
1990 TN4	1990 10	29.67243	02 32	25.25	+00 26	55.8		V 413
1990 TN4	1990 11	19.57660	02 15	46.30	+00 16	45.9		413
1990 TO4 *	1990 10	09.62698	02 48	16.01	+01 17	18.5	17.5V	413
1990 TO4	1990 10	22.57001	02 38	02.24	+00 41	33.5		V 413
1990 TO4	1990 11	19.57660	02 11	08.90	+00 46	14.2		F 413

1990	TO4	1990	11	20.47353	02	10	25.31	+00	48	58.1		413
1990	TO4	1990	11	20.52561	02	10	22.66	+00	49	09.0		413
1990	TP4	* 1990	10	09.62698	02	49	11.51	+02	49	00.5	17.5V	V 413
1990	TP4	1990	10	09.68948	02	49	09.57	+02	48	34.3		V 413
1990	TP4	1990	10	20.55747	02	42	28.59	+01	30	37.2		413
1990	TP4	1990	10	20.61302	02	42	26.31	+01	30	15.9		413
1990	TQ4	* 1990	10	09.62698	02	55	19.07	+02	40	02.6	17.5V	F 413
1990	TQ4	1990	10	09.68948	02	55	17.04	+02	39	28.3		413
1990	TQ4	1990	10	20.55747	02	48	18.64	+00	53	28.4		413
1990	TQ4	1990	10	20.61302	02	48	16.13	+00	52	57.6		413
1990	TR4	1982	02	05.73328	12	32	30.28	-05	21	28.6	17	V 413
1990	TR4	1983	05	07.75951	17	50	16.38	-00	40	48.1	17	V 413
1990	TR4	1988	08	02.36256	15	35	18.38	+00	01	35.1	17	V 413
1990	TR4	1988	08	02.43200	15	35	19.80	+00	01	10.7		413
1990	TR4	* 1990	10	09.65823	02	55	35.00	+01	25	36.3	17	V 413
1990	TR4	1990	10	20.55747	02	49	22.04	-00	14	21.3		413
1990	TR4	1990	10	20.61302	02	49	19.84	-00	14	49.5		413
1990	TR4	1990	10	22.69501	02	47	57.27	-00	33	17.6		V 413
1990	TR4	1990	10	29.54743	02	43	09.33	-01	31	30.8		V 413
1990	TR4	1990	11	12.57948	02	32	55.28	-03	10	32.0	16	V 413
1990	TR4	1990	11	19.59005	02	28	10.70	-03	46	16.7		413
1990	TS4	* 1990	10	09.62698	02	56	29.60	+01	07	55.9	17	V 413
1990	TS4	1990	10	09.68948	02	56	27.59	+01	07	40.3		413
1990	TS4	1990	10	20.55747	02	48	38.92	+00	22	13.8		413
1990	TS4	1990	10	20.61302	02	48	36.26	+00	22	03.0		413
1990	TT4	* 1990	10	09.62698	02	58	04.11	+03	10	50.7	17	V 413
1990	TT4	1990	10	09.68948	02	58	02.56	+03	10	22.1		413
1990	TT4	1990	10	20.55747	02	52	36.20	+01	43	00.2		413
1990	TT4	1990	10	20.61302	02	52	34.20	+01	42	36.1		413
1990	TT4	1990	10	22.57001	02	51	21.43	+01	27	21.9		F 413
1990	TT4	1990	10	22.69501	02	51	16.42	+01	26	21.9		V 413
1990	TT4	1990	10	29.54743	02	46	41.62	+00	36	12.9		F 413
1990	TT4	1990	11	08.58392	02	39	30.81	-00	25	07.2		413
1990	TT4	1990	11	09.59679	02	38	47.54	-00	30	16.0		413
1990	TU4	* 1990	10	09.48778	22	29	13.57	-02	49	19.4	18	V 413
1990	TU4	1990	10	09.53986	22	29	11.92	-02	49	19.2		413
1990	TU4	1990	10	11.49659	22	28	14.44	-02	50	11.2		413
1990	TV4	* 1990	10	09.48778	22	29	32.50	-01	15	20.4	17	V 413
1990	TV4	1990	10	09.53986	22	29	31.57	-01	15	50.1		413
1990	TV4	1990	10	11.49659	22	29	02.29	-01	35	42.5		413
1990	TW4	* 1990	10	09.48778	22	33	23.20	-01	49	04.9	18	V 413
1990	TW4	1990	10	09.53986	22	33	22.34	-01	49	14.3		413
1990	TW4	1990	10	11.49659	22	32	50.01	-01	56	22.3		413
1990	TX4	* 1990	10	09.48778	22	34	49.40	-00	27	01.1	17.5V	413
1990	TX4	1990	10	09.53986	22	34	48.53	-00	27	18.5		413
1990	TX4	1990	10	11.49659	22	34	23.41	-00	39	19.1		413
1990	TY4	* 1990	10	09.48778	22	34	50.82	-01	55	38.6	18	V 413
1990	TY4	1990	10	09.53986	22	34	49.68	-01	55	50.8		413
1990	TY4	1990	10	11.49659	22	34	16.15	-02	03	52.3		413
1990	TZ4	* 1990	10	09.48778	22	34	57.49	-00	23	38.2	18.5V	413
1990	TZ4	1990	10	09.53986	22	34	56.20	-00	23	42.0		413
1990	TZ4	1990	10	11.49659	22	34	15.26	-00	26	35.6		F 413
1990	TA5	* 1990	10	09.48778	22	36	16.57	-01	13	39.5	17.5V	413
1990	TA5	1990	10	09.53986	22	36	15.50	-01	13	53.8		413
1990	TA5	1990	10	11.49659	22	35	41.50	-01	23	54.2		413
1990	TB5	* 1990	10	09.48778	22	36	52.10	-02	47	58.7	18	V 413
1990	TB5	1990	10	09.53986	22	36	51.02	-02	48	24.7		413
1990	TB5	1990	10	11.49659	22	36	17.72	-03	06	15.1		413
1990	TC5	* 1990	10	09.48778	22	37	50.44	-02	27	19.1	17.5V	413

1990	TC5	1990	10	09.53986	22	37	49.29	-02	27	38.2		413
1990	TC5	1990	10	11.49659	22	37	14.25	-02	40	36.9		413
1990	TD5	* 1990	10	09.48778	22	40	57.64	-00	35	22.1	18	V 413
1990	TD5	1990	10	09.53986	22	40	56.63	-00	35	40.3		413
1990	TD5	1990	10	11.49659	22	40	25.71	-00	48	07.2		413
1990	TE5	* 1990	10	09.48778	22	41	25.35	-01	16	41.9	18	V 413
1990	TE5	1990	10	11.49659	22	40	42.00	-01	14	59.8		413
1990	TF5	* 1990	10	09.48778	22	42	39.91	-02	34	31.2	16.5V	413
1990	TF5	1990	10	09.53986	22	42	38.69	-02	34	31.6		413
1990	TF5	1990	10	11.49659	22	42	02.70	-02	35	35.7		413
1990	TG5	* 1990	10	09.48778	22	44	00.55	-00	47	08.7	17	V 413
1990	TG5	1990	10	09.53986	22	43	59.54	-00	47	15.6		413
1990	TG5	1990	10	11.49659	22	43	29.46	-00	52	18.2		413
1990	TH5	* 1990	10	09.48778	22	44	08.16	-02	36	10.3	18	V 413
1990	TH5	1990	10	09.53986	22	44	06.88	-02	36	28.3		413
1990	TH5	1990	10	11.49659	22	43	29.20	-02	49	16.1		413
1990	TJ5	* 1990	10	09.48778	22	44	13.42	-00	46	52.4	18	V 413
1990	TJ5	1990	10	09.53986	22	44	12.29	-00	46	55.7		413
1990	TJ5	1990	10	11.49659	22	43	41.16	-00	50	27.3		413
1990	TK5	* 1990	10	09.48778	22	47	13.35	-00	25	21.1	17	V 413
1990	TK5	1990	10	09.53986	22	47	12.20	-00	25	44.4		413
1990	TK5	1990	10	11.49659	22	46	36.40	-00	41	01.4		413
1990	TM5	* 1990	10	09.51382	22	27	26.04	+01	06	19.6	17.5V	413
1990	TM5	1990	10	11.49659	22	27	14.50	+00	54	38.7		413
1990	TN5	* 1990	10	09.51382	22	28	47.21	+00	54	16.6	17.5V	413
1990	TN5	1990	10	11.49659	22	28	49.30	+00	36	23.4		413
1990	TO5	* 1990	10	09.51382	22	29	35.32	+01	07	10.3	18	V 413
1990	TO5	1990	10	11.49659	22	28	35.73	+00	30	41.1		413
1990	TP5	* 1990	10	09.51382	22	30	34.72	+02	48	38.3	18	V 413
1990	TP5	1990	10	11.49659	22	30	02.76	+02	32	50.2		413
1990	TQ5	* 1990	10	09.51382	22	31	50.56	+00	10	36.0	17.5V	413
1990	TQ5	1990	10	11.49659	22	31	07.34	+00	13	24.6		413
1990	TR5	* 1990	10	09.51382	22	31	55.14	+01	38	39.4	17	V 413
1990	TR5	1990	10	11.49659	22	32	28.87	+01	25	04.5		413
1990	TS5	* 1990	10	09.51382	22	32	14.01	+01	12	05.0	18	V 413
1990	TS5	1990	10	11.49659	22	31	49.78	+00	55	52.2		413
1990	TT5	* 1990	10	09.51382	22	33	16.35	+02	04	13.2	18	V 413
1990	TT5	1990	10	11.49659	22	32	47.99	+01	50	36.8		413
1990	TU5	* 1990	10	09.51382	22	35	18.00	-01	53	04.1	18.5V	413
1990	TU5	1990	10	11.49659	22	34	39.60	-02	03	33.7		F 413
1990	TV5	* 1990	10	09.51382	22	36	20.05	-02	00	25.0	19	V F 413
1990	TV5	1990	10	11.49659	22	35	34.93	-02	12	54.8		V 413
1990	TW5	* 1990	10	09.51382	22	36	35.59	+02	35	54.0	18	V 413
1990	TW5	1990	10	11.49659	22	36	07.67	+02	21	12.0		F 413
1990	TX5	* 1990	10	09.51382	22	37	07.44	-00	58	25.4	18.5V	413
1990	TX5	1990	10	11.49659	22	36	17.98	-01	01	52.5		V 413
1990	TY5	* 1990	10	09.51382	22	38	14.20	+01	58	33.0	18	V 413
1990	TY5	1990	10	11.49659	22	37	26.73	+01	55	15.3		413
1990	TZ5	* 1990	10	09.51382	22	38	58.21	+03	02	52.0	18	V 413
1990	TZ5	1990	10	11.49659	22	38	07.61	+02	57	25.7		413
1990	TA6	* 1990	10	09.51382	22	40	33.06	+01	01	50.2	18	V p 413
1990	TA6	1990	10	11.49659	22	40	00.54	+00	47	45.6		413
1990	TB6	* 1990	10	09.51382	22	40	46.78	-02	38	05.1	18	V 413
1990	TB6	1990	10	11.49659	22	40	01.02	-02	37	39.9		413
1990	TC6	* 1990	10	09.51382	22	42	15.78	-00	43	16.4	18	V 413
1990	TC6	1990	10	11.49659	22	41	28.19	-00	51	10.2		V 413
1990	TD6	* 1990	10	09.51382	22	42	23.17	-00	49	49.3	18	V 413
1990	TD6	1990	10	11.49659	22	41	39.51	-00	57	26.5		413
1990	TE6	* 1990	10	09.51382	22	42	23.83	+00	12	35.3	18	V 413

1990	TE6	1990	10	11.49659	22	41	30.68	+00	06	49.5		413
1990	TF6	* 1990	10	09.51382	22	42	55.85	+00	28	04.8	17.5V	413
1990	TF6	1990	10	11.49659	22	41	50.82	+00	28	06.1		413
1990	TG6	* 1990	10	09.51382	22	43	19.04	+00	41	43.7	18.5V F	413
1990	TG6	1990	10	11.49659	22	42	27.79	+00	26	47.5	V	413
1990	TH6	* 1990	10	09.51382	22	43	23.04	+02	19	13.8	18 V	413
1990	TH6	1990	10	11.49659	22	43	04.42	+01	59	33.7		413
1990	TJ6	* 1990	10	09.51382	22	43	25.07	-02	09	34.8	18 V	413
1990	TJ6	1990	10	11.49659	22	42	36.27	-02	15	17.2		413
1990	TK6	* 1990	10	09.51382	22	43	47.56	-00	47	47.8	18.5V V	413
1990	TK6	1990	10	11.49659	22	42	49.79	-00	57	30.4	V	413
1990	TL6	* 1990	10	09.51382	22	43	56.90	-01	24	00.7	16.5V	413
1990	TL6	1990	10	11.49659	22	43	35.29	-01	26	53.4		413
1990	TM6	* 1990	10	09.51382	22	45	04.88	-01	07	33.2	19 V V	413
1990	TM6	1990	10	11.49659	22	44	46.71	-01	17	19.0		413
1990	TN6	* 1990	10	09.51382	22	45	22.50	-01	03	18.3	18 V	413
1990	TN6	1990	10	11.49659	22	44	59.42	-01	13	09.7		413
1990	TO6	* 1990	10	09.51382	22	45	24.25	-02	00	20.4	18.5V F	413
1990	TO6	1990	10	11.49659	22	44	29.20	-02	04	01.4	F	413
1990	TP6	* 1990	10	09.51382	22	45	38.70	-00	38	50.4	18 V	413
1990	TP6	1990	10	11.49659	22	44	59.30	-00	44	02.4	p	413
1990	TQ6	* 1990	10	09.51382	22	46	06.81	-01	41	16.5	18.5V F	413
1990	TQ6	1990	10	11.49659	22	45	20.12	-01	50	14.4		413
1990	TR6	* 1990	10	09.51382	22	46	40.21	-01	35	31.7	18 V	413
1990	TR6	1990	10	11.49659	22	46	19.92	-01	48	25.1		413
1990	TS6	* 1990	10	09.51382	22	46	46.84	+02	06	08.8	18 V	413
1990	TS6	1990	10	11.49659	22	46	18.44	+01	52	02.1		413
1990	TT6	* 1990	10	09.51382	22	47	10.66	-02	21	13.3	18.5V F	413
1990	TT6	1990	10	11.49659	22	46	15.49	-02	22	57.3	V	413
1990	TU6	* 1990	10	09.51382	22	47	17.68	-02	54	51.7	18 V	413
1990	TU6	1990	10	11.49659	22	47	02.29	-02	51	11.2		413
1990	TV6	* 1990	10	09.51382	22	48	39.78	+03	05	36.5	17.5V	413
1990	TV6	1990	10	11.49659	22	47	40.10	+03	09	40.7		413
1990	TW6	* 1990	10	09.51382	22	49	30.72	-00	48	49.8	18.5V V	413
1990	TW6	1990	10	11.49659	22	48	31.80	-00	52	59.3		413
1990	TX6	* 1990	10	09.51382	22	49	59.68	-01	16	14.6	18 V	413
1990	TX6	1990	10	11.49659	22	49	01.30	-01	27	56.4		413
1990	TY6	* 1990	10	09.51382	22	50	18.70	-00	47	34.5	18 V	413
1990	TY6	1990	10	11.52263	22	49	31.08	-00	49	40.0	F	413
1990	TZ6	* 1990	10	09.51382	22	51	08.92	-01	45	22.4	18 V	413
1990	TZ6	1990	10	11.49659	22	50	12.40	-01	46	43.4		413
1990	TA7	* 1990	10	09.51382	22	51	27.08	+01	11	10.0	18 V	413
1990	TA7	1990	10	11.49659	22	50	20.50	+01	04	11.1		413
1990	TB7	* 1990	10	09.51382	22	52	15.91	+00	49	30.8	18 V	413
1990	TB7	1990	10	11.49659	22	51	43.78	+00	41	41.8		413
1990	TC7	* 1990	10	09.53986	22	41	11.20	-00	51	05.0	18 V	413
1990	TC7	1990	10	11.49659	22	40	33.59	-01	05	16.0		413
1990	UC	1990	11	20.49956	01	57	42.71	+00	56	13.4	17 V	413
1990	UC	1990	11	23.62049	01	56	48.27	+00	47	20.0		413
1990	UQ	* 1990	10	20.63919	03	46	44.89	+06	08	42.3	17 V	413
1990	UQ	1990	10	20.69475	03	46	34.31	+06	08	19.9		413
1990	UQ	1990	10	27.71774	03	25	48.67	+05	25	47.2	17 V	413
1990	UQ	1990	10	27.73163	03	25	46.32	+05	25	44.8		413
1990	UY	1990	11	08.58392	02	45	56.33	+01	38	02.2	16.5V	413
1990	UY	1990	11	09.56034	02	45	11.38	+01	32	59.6		413
1990	UY	1990	11	09.63325	02	45	08.01	+01	32	38.7		413
1990	UH1	1990	09	28.71525	03	34	47.91	+02	51	30.1	16 V	413
1990	UH1	* 1990	10	20.63919	03	32	32.02	+02	23	29.1	15.5V	413
1990	UH1	1990	10	20.69475	03	32	30.12	+02	23	27.9		413

1990 UH1	1990 10	27.72469	03 27	52.99	+02 24	27.5		413
1990 UH1	1990 10	28.74510	03 27	05.30	+02 25	19.3		413
1990 UH1	1990 11	23.65081	03 02	43.26	+04 07	14.8		413
1990 UM1	1990 10	27.72469	03 13	40.36	+06 31	14.4	15.5V	413
1990 UM1	1990 10	28.73757	03 12	53.73	+06 19	56.3		413
1990 US1 *	1990 10	20.63919	03 28	16.16	+06 27	15.9	17.5V	413
1990 US1	1990 10	20.69475	03 28	13.65	+06 27	00.8		413
1990 US1	1990 10	27.72469	03 22	21.45	+05 58	20.9		413
1990 UT1 *	1990 10	20.63919	03 30	19.24	+03 58	35.3	17.5V	413
1990 UT1	1990 10	20.69475	03 30	17.30	+03 58	32.0		413
1990 UT1	1990 10	27.72469	03 25	13.33	+03 51	25.8		413
1990 UU1 *	1990 10	20.63919	03 31	41.56	+07 02	41.7	17.5V	413
1990 UU1	1990 10	20.69475	03 31	39.69	+07 02	01.8		413
1990 UU1	1990 10	27.72469	03 27	15.56	+05 38	44.2		I 413
1990 UV1 *	1990 10	20.63919	03 33	47.11	+07 44	48.4	17.5V	413
1990 UV1	1990 10	20.69475	03 33	45.16	+07 44	42.3		413
1990 UV1	1990 10	27.72469	03 29	04.65	+07 29	22.0		413
1990 UW1 *	1990 10	20.63919	03 35	07.99	+05 43	19.0	17.5V	F 413
1990 UW1	1990 10	20.69475	03 35	05.27	+05 43	37.6		F 413
1990 UW1	1990 10	27.72469	03 28	53.92	+06 25	53.1		413
1990 UX1 *	1990 10	20.63919	03 35	44.67	+07 38	23.0	17 V	413
1990 UX1	1990 10	20.69475	03 35	43.02	+07 37	50.5		413
1990 UX1	1990 10	27.72469	03 31	32.51	+06 25	06.3		413
1990 UY1 *	1990 10	20.63919	03 36	44.78	+03 42	43.6	17.5V	413
1990 UY1	1990 10	20.69475	03 36	42.66	+03 42	32.7		413
1990 UY1	1990 10	27.72469	03 31	37.76	+03 19	49.8		413
1990 UG2 *	1990 10	20.55747	03 01	32.18	-00 04	29.7	16.5V	413
1990 UG2	1990 10	20.61302	03 01	29.97	-00 04	40.5		413
1990 UG2	1990 10	22.57001	03 00	05.48	-00 12	14.1		F 413
1990 UG2	1990 10	22.69501	03 00	00.26	-00 12	38.9		V 413
1990 UG2	1990 11	08.58392	02 46	22.65	-00 57	39.4	17 V	413
1990 UG2	1990 11	09.56034	02 45	33.95	-00 58	56.8		413
1990 UG2	1990 11	09.63325	02 45	30.19	-00 59	01.3		413
1990 UH2	1975 01	23.73095	11 38	12.39	-00 19	10.0	18 V	413
1990 UH2	1989 07	07.45228	15 38	39.42	+00 00	29.2		413
1990 UH2 *	1990 10	20.55747	03 01	39.96	-00 00	01.9	17 V	413
1990 UH2	1990 10	20.61302	03 01	37.66	-00 00	30.3		413
1990 UH2	1990 10	22.57001	03 00	12.35	-00 18	41.8		V 413
1990 UH2	1990 10	22.69501	03 00	05.31	-00 20	02.5		V 413
1990 UH2	1990 11	08.58392	02 46	14.90	-02 32	00.8	17.5V	413
1990 UH2	1990 11	09.56034	02 45	26.60	-02 37	47.7		413
1990 UH2	1990 11	09.63325	02 45	22.94	-02 38	11.1		413
1990 VF *	1990 11	08.58392	02 38	48.84	-01 41	26.1	18 V	V 413
1990 VF	1990 11	09.56034	02 37	53.39	-02 00	15.2		F 413
1990 VF	1990 11	09.63325	02 37	49.11	-02 01	30.1		F 413
1990 VG *	1990 11	08.58392	02 39	17.23	-01 43	21.1	18 V	F 413
1990 VG	1990 11	09.56034	02 38	20.82	-01 44	07.9		413
1990 VG	1990 11	09.63325	02 38	16.44	-01 44	10.5		p 413
1990 VH *	1990 11	08.58392	02 40	16.26	-00 42	26.5	17.5V	413
1990 VH	1990 11	09.56034	02 39	23.05	-00 47	17.2		413
1990 VH	1990 11	09.63325	02 39	18.50	-00 47	39.3		413
1990 VJ *	1990 11	08.58392	02 40	41.53	+00 47	35.1	18 V	V 413
1990 VJ	1990 11	09.56034	02 39	52.76	+00 35	40.6		V 413
1990 VJ	1990 11	09.63325	02 39	48.70	+00 34	46.9		V 413
1990 VK *	1990 11	08.58392	02 40	49.68	-01 41	32.8	18 V	F 413
1990 VK	1990 11	09.56034	02 40	02.33	-01 45	19.9		413
1990 VL *	1990 11	08.58392	02 44	26.55	+00 34	51.2	18 V	V 413
1990 VL	1990 11	09.56034	02 43	22.37	+00 39	03.5		V 413
1990 VL	1990 11	09.63325	02 43	17.29	+00 39	25.1		F 413

1990 VM *	1990 11 08.58392	02 44 42.22	+02 03 19.4	17.5V	413
1990 VM	1990 11 09.56034	02 43 55.63	+02 01 25.3		413
1990 VM	1990 11 09.63325	02 43 52.20	+02 01 18.4		413
1990 VN *	1990 11 08.58392	02 46 19.51	-01 54 02.6	17.5V	413
1990 VN	1990 11 09.56034	02 45 26.31	-01 56 47.8		413
1990 VN	1990 11 09.63325	02 45 22.29	-01 56 58.7		413
1990 VO *	1990 11 08.58392	02 47 50.42	+01 07 51.6	18 V V	413
1990 VO	1990 11 09.56034	02 47 04.17	+01 03 27.4		413
1990 VO	1990 11 09.63325	02 47 00.69	+01 03 11.0		413
1990 VP *	1990 11 08.58392	02 47 55.68	+01 39 41.0	18 V F	413
1990 VP	1990 11 09.56034	02 47 02.03	+01 39 15.4		413
1990 VP	1990 11 09.63325	02 46 58.01	+01 39 15.4		413
1990 VQ *	1990 11 08.58392	02 48 07.46	-01 43 54.6	18 V V	413
1990 VQ	1990 11 09.56034	02 47 05.04	-01 44 03.9		413
1990 VQ	1990 11 09.63325	02 47 00.04	-01 44 05.7		413
1990 VR *	1990 11 08.58392	02 52 30.98	-01 42 43.7	18 V F	413
1990 VR	1990 11 09.56034	02 51 30.86	-01 40 00.1		413
1990 VR	1990 11 09.63325	02 51 26.18	-01 39 46.7		413
1990 VS *	1990 11 08.58392	02 53 29.33	+01 36 53.2	18 V F	413
1990 VS	1990 11 09.56034	02 52 44.81	+01 26 23.5		413
1990 VS	1990 11 09.63325	02 52 41.34	+01 25 38.8		413
1990 VT *	1990 11 08.58392	02 54 12.76	+02 50 38.7	18 V F	413
1990 VT	1990 11 09.56034	02 53 16.09	+02 48 21.2		413
1990 VT	1990 11 09.63325	02 53 11.73	+02 48 13.3		413
1990 VU *	1990 11 08.58392	02 55 35.52	+02 07 59.1	18 V F	413
1990 VU	1990 11 09.56034	02 54 49.81	+02 03 46.4		413
1990 VU	1990 11 09.63325	02 54 46.45	+02 03 30.3		413
1990 VV *	1990 11 08.58392	02 56 28.88	+00 39 56.4	17.5V	413
1990 VV	1990 11 09.56034	02 55 31.70	+00 39 05.9		413
1990 VV	1990 11 09.63325	02 55 27.25	+00 39 02.9		413
1990 VW *	1990 11 08.58392	02 58 39.70	+01 34 04.5	17.5V	413
1990 VW	1990 11 09.56034	02 57 44.30	+01 30 16.0		413
1990 VW	1990 11 09.63325	02 57 40.12	+01 30 00.8		413
1990 VX *	1990 11 08.58392	03 00 46.42	-02 16 11.0	18 V V	413
1990 VX	1990 11 09.56034	02 59 45.26	-02 12 57.6		413
1990 VX	1990 11 09.63325	02 59 40.52	-02 12 41.3		413
1990 VY *	1990 11 08.58392	03 01 24.41	+01 49 28.6	18 V V	413
1990 VY	1990 11 09.56034	03 00 38.98	+01 44 59.7		F 413
1990 VY	1990 11 09.63325	03 00 35.47	+01 44 41.0		F 413
1990 VC1	1990 11 08.49243	01 30 38.44	-12 27 29.1		413
1990 VC1	1990 11 08.55146	01 30 35.94	-12 27 17.9		413
1990 VC1 *	1990 11 12.49608	01 28 16.42	-12 12 27.4	16 V	413
1990 VC1	1990 11 12.54816	01 28 14.64	-12 12 14.1		413
1990 VC1	1990 11 13.52617	01 27 43.31	-12 07 46.5		R 413
1990 VD1 *	1990 11 12.56532	03 19 31.07	-07 41 37.4	16.5V	413
1990 VD1	1990 11 12.61741	03 19 29.40	-07 41 37.3		413
1990 VD1	1990 11 13.62178	03 19 02.54	-07 41 01.2		413
1990 VE1	1990 09 28.69442	03 43 43.87	-02 14 00.6	17 V	413
1990 VE1	1990 09 28.73609	03 43 43.90	-02 14 20.9		413
1990 VE1 *	1990 11 12.56532	03 19 35.78	-07 22 49.4	16.5V	413
1990 VE1	1990 11 12.61741	03 19 32.99	-07 22 55.6		413
1990 VE1	1990 11 13.62178	03 18 38.76	-07 25 00.4		413
1990 VF1 *	1990 11 12.64013	05 14 13.35	-13 50 10.2	17 V	413
1990 VF1	1990 11 12.69221	05 14 10.17	-13 50 11.6		413
1990 VF1	1990 11 13.64630	05 13 13.06	-13 50 43.2		413
1990 VF1	1990 11 25.59909	04 58 44.15	-13 22 25.0	17 V	413
1990 VF1	1990 11 25.64422	04 58 40.21	-13 22 09.3		413
1990 VF1	1990 11 26.67992	04 57 14.20	-13 16 19.1		413
1990 VG1 *	1990 11 12.64013	05 20 51.02	-16 50 40.4	16.5V	413

1990 VG1	1990 11	12.69221	05 20	48.97	-16 51	14.4			413
1990 VG1	1990 11	13.63312	05 20	14.78	-17 01	46.3			413
1990 VC2 *	1990 11	12.49608	01 42	38.98	-09 51	19.1	17	V	413
1990 VC2	1990 11	12.54816	01 42	36.80	-09 51	14.9			413
1990 VC2	1990 11	13.53648	01 41	58.89	-09 49	41.1			413
1990 VX2	1990 11	19.60970	04 08	20.50	+28 54	09.8	15	V	413
1990 VX2	1990 11	19.61317	04 08	20.12	+28 54	14.5			413
1990 WA	1990 11	19.64760	06 03	29.52	+16 41	07.4			413
1990 WA	1990 11	19.65171	06 03	29.67	+16 41	23.0			413
1990 WA	1990 11	20.70066	06 03	52.88	+17 45	09.8	16	V	413
1990 WB *	1990 11	19.44441	00 50	13.66	-04 42	13.9			413
1990 WB	1990 11	19.49649	00 50	12.93	-04 42	05.6			413
1990 WB	1990 11	21.50142	00 49	48.46	-04 36	36.4	15.5V		413
1990 WC *	1990 11	19.44441	00 53	50.04	-05 39	39.1	15.5V		413
1990 WC	1990 11	19.49649	00 53	49.21	-05 39	12.2			413
1990 WC	1990 11	21.50142	00 53	28.58	-05 21	08.3	15.5V		413
1990 WD *	1990 11	19.44441	00 54	07.56	-05 35	51.4	17	V	413
1990 WD	1990 11	19.49649	00 54	07.17	-05 35	30.7			413
1990 WD	1990 11	21.50142	00 54	02.43	-05 21	15.8			413
1990 WE *	1990 11	19.44441	01 09	07.37	-05 35	34.4	16.5V		413
1990 WE	1990 11	19.49649	01 09	06.01	-05 35	24.3			413
1990 WE	1990 11	21.51291	01 08	17.73	-05 28	24.4			413
1990 WH *	1990 11	20.47352	01 57	01.84	+01 49	27.4	17	V	413
1990 WH	1990 11	20.52560	01 56	59.64	+01 49	59.3			413
1990 WH	1990 11	23.62049	01 55	10.25	+02 17	59.2		V	413
1990 WJ *	1990 11	20.47352	01 57	37.94	+01 02	38.5	17.5V		413
1990 WJ	1990 11	20.52560	01 57	35.78	+01 02	52.1			413
1990 WJ	1990 11	23.62049	01 55	47.24	+01 13	38.2		F	413
1990 WK *	1990 11	20.49956	01 47	22.37	+01 36	46.8	16	V	413
1990 WK	1990 11	23.60508	01 45	48.40	+01 39	40.5			413
1990 WL *	1990 11	20.49956	01 59	55.93	-02 09	16.2	16	V	413
1990 WL	1990 11	23.63446	01 58	21.45	-02 10	01.3			413
1990 WM *	1990 11	20.49956	02 06	28.67	-03 07	24.5	17.5V		413
1990 WM	1990 11	23.63446	02 04	31.50	-03 03	37.3			413
1990 WN	1990 11	19.57660	02 10	43.79	+00 40	54.2	16.5V		413
1990 WN *	1990 11	20.47353	02 10	05.93	+00 42	20.6		p	413
1990 WN	1990 11	20.52561	02 10	03.69	+00 42	25.8			413
1990 WX2 *	1990 11	25.59909	04 52	23.83	-13 04	19.4	18	V	413
1990 WX2	1990 11	25.64422	04 52	22.42	-13 04	20.5			413
1990 WX2	1990 11	26.67992	04 51	52.06	-13 04	39.1		F	413
1990 WY2 *	1990 11	25.59909	04 58	50.53	-16 01	06.1			413
1990 WY2	1990 11	25.64422	04 58	48.75	-16 02	08.1	16.5V		413
1990 WY2	1990 11	27.68683	04 57	37.82	-16 48	03.2			413
7072 P-L	1990 11	19.44441	01 00	08.24	-05 11	50.8			413
10	1990 10	09.51382	22 44	31.10	-02 41	57.0			413
10	1990 10	11.49659	22 43	44.42	-02 48	17.6			413
14	1990 11	20.49956	01 50	43.47	+00 37	45.8			413
14	1990 11	23.60508	01 48	39.50	+00 38	41.4			413
42	1990 11	12.44899	00 16	35.42	-11 28	37.3			413
323	1990 10	28.53079	01 55	40.00	-41 14	57.1		O	413
323	1990 10	28.68009	01 55	30.36	-41 13	01.1		I	413
330	1990 10	27.72469	03 11	20.84	+03 06	28.3			413
330	1990 11	08.58392	03 02	14.20	+02 13	37.0			413
330	1990 11	09.59679	03 01	24.47	+02 10	30.8			413
346	1990 11	23.60508	01 49	31.57	-00 11	52.4			413
382	1990 10	27.44704	23 03	28.24	+01 27	53.6			413
413	1990 11	06.50760	00 56	52.44	-32 14	34.1			413
413	1990 11	06.63260	00 56	51.43	-32 12	15.2			413
619	1990 10	27.72469	03 09	30.27	+04 01	43.7			413

619	1990	11	08.58392	02	59	39.16	+02	05	56.8	413
619	1990	11	09.59679	02	58	46.96	+01	57	02.7	413
630	1990	11	12.52212	01	31	49.45	-11	49	39.8	413
653	1990	11	12.44899	00	22	04.94	-11	45	38.7	413
704	1990	10	20.44120	22	01	42.06	+12	56	16.7	413
707	1990	10	09.51382	22	45	09.90	+00	34	56.2	413
744	1990	10	27.72469	03	08	36.32	+06	34	39.1	413
744	1990	10	28.73757	03	07	53.33	+06	30	26.5	413
775	1990	11	12.50014	22	40	26.70	+02	20	56.7	413
775	1990	11	13.47069	22	40	41.71	+02	20	19.2	413
785	1990	11	19.47045	01	07	03.29	-06	16	34.2	413
786	1990	10	27.72469	03	16	45.56	+03	26	08.2	413
823	1990	10	09.48778	22	34	59.21	-02	39	00.1	413
823	1990	10	09.53986	22	34	57.74	-02	39	13.6	413
823	1990	10	11.49659	22	34	09.78	-02	48	27.5	413
904	1990	10	27.44704	22	58	53.69	+00	16	11.2	413
937	1990	10	11.49659	22	52	44.22	-00	08	27.2	413
937	1990	10	27.44704	22	55	51.79	-01	02	08.8	413
1210	1990	10	09.62698	02	48	00.92	-00	05	23.9	413
1210	1990	10	09.68948	02	47	58.55	-00	05	39.6	413
1210	1990	10	20.55747	02	40	28.55	-00	51	45.8	413
1210	1990	10	20.61302	02	40	26.03	-00	51	57.8	413
1210	1990	10	22.57001	02	38	56.23	-00	59	24.2	413
1210	1990	10	22.69501	02	38	50.39	-00	59	52.4	413
1210	1990	10	29.54743	02	33	23.65	-01	22	48.7	413
1210	1990	10	29.67243	02	33	17.27	-01	23	12.5	413
1216	1990	11	08.58392	02	40	39.04	+02	37	57.6	413
1216	1990	11	09.59679	02	39	35.86	+02	34	41.6	413
1280	1990	10	09.51382	22	52	24.55	+01	15	48.3	413
1280	1990	10	27.44704	22	47	33.28	+00	25	34.8	413
1285	1990	10	27.44704	22	49	24.54	-02	05	14.1	413
1379	1990	10	09.62698	02	57	57.16	-00	03	30.8	413
1379	1990	10	09.68948	02	57	54.95	-00	04	06.1	413
1379	1990	10	20.55747	02	50	39.36	-01	47	29.6	413
1379	1990	10	20.61302	02	50	36.87	-01	47	57.8	413
1379	1990	10	22.57001	02	49	06.18	-02	05	48.2	413
1379	1990	10	22.69501	02	49	00.17	-02	06	55.2	413
1532	1990	10	09.48778	22	49	46.62	-02	14	47.9	413
1532	1990	10	09.53986	22	49	44.93	-02	14	52.0	413
1532	1990	10	11.49659	22	48	46.69	-02	18	27.5	413
1603	1990	10	09.62698	02	45	38.25	+01	50	45.8	413
1603	1990	10	09.68948	02	45	35.97	+01	50	23.9	413
1603	1990	10	20.55747	02	38	08.87	+00	46	36.6	413
1603	1990	10	20.61302	02	38	06.28	+00	46	19.1	413
1603	1990	10	29.54743	02	30	49.12	+00	01	18.9	413
1603	1990	10	29.67243	02	30	42.59	+00	00	45.1	413
1629	1990	11	12.44899	00	10	50.10	-12	22	51.3	413
1765	1990	11	08.58392	02	55	14.32	+01	31	58.5	413
1765	1990	11	09.59679	02	54	15.86	+01	34	15.2	413
1847	1990	10	20.55747	02	54	16.61	-00	42	40.8	413
1847	1990	10	20.61302	02	54	13.91	-00	42	53.4	413
1847	1990	10	22.57001	02	52	36.37	-00	51	08.9	413
1847	1990	10	22.69501	02	52	30.00	-00	51	39.0	413
1847	1990	10	29.54743	02	46	28.13	-01	16	59.3	413
1847	1990	10	29.67243	02	46	21.00	-01	17	22.6	413
1847	1990	11	08.58392	02	37	12.86	-01	41	27.9	413
1935	1990	10	09.48778	22	28	54.80	-02	03	32.6	413
1935	1990	10	09.53986	22	28	54.22	-02	03	58.0	413
1935	1990	10	11.49659	22	28	40.40	-02	20	45.7	413

2127	1990	11	08.58392	02	48	38.74	-01	39	33.0		413
2127	1990	11	09.59679	02	47	51.31	-01	41	03.5		413
2192	1990	10	09.51382	22	42	06.61	-00	54	44.5		413
2192	1990	10	11.49659	22	41	33.06	-01	07	21.8		413
2277	1990	10	20.55747	02	56	03.34	-00	22	51.2		413
2277	1990	10	20.61302	02	56	00.69	-00	23	05.0		413
2277	1990	11	08.58392	02	39	01.87	-01	26	22.0		413
2277	1990	11	09.59679	02	38	05.42	-01	28	17.6		413
2416	1990	11	19.47045	00	59	09.84	-06	17	05.8		413
2507	1990	11	20.49956	02	03	26.13	-03	03	47.3		413
2507	1990	11	23.63446	02	01	31.65	-03	04	35.3		413
2559	1990	10	27.44704	23	03	58.20	-03	07	28.9		413
2618	1990	11	12.50014	22	46	18.61	+04	49	00.3	F	413
2618	1990	11	13.47069	22	46	43.16	+04	47	42.8	F	413
2647	1990	10	09.51382	22	39	35.67	-01	29	09.9		413
2647	1990	10	11.49659	22	38	49.77	-01	36	08.1		413
2648	1990	10	27.44704	22	58	04.33	+02	26	32.4		413
3040	1990	10	13.44722	21	01	56.30	-43	45	27.8		413
3089	1990	11	12.52212	01	39	04.94	-11	35	39.6		413
3096	1990	10	09.62698	02	43	32.08	+01	40	20.8	16.5V	413
3096	1990	10	09.68948	02	43	29.79	+01	39	43.1		413
3246	1990	11	08.58392	02	41	59.54	+02	10	00.9		413
3246	1990	11	09.59679	02	41	16.36	+02	02	11.4		413
3383	1990	11	12.52212	01	35	24.92	-12	29	57.1		413
3539	1990	11	08.49243	01	08	31.09	-11	45	47.2		413
3539	1990	11	08.55146	01	08	29.05	-11	45	49.7		413
3611	1990	10	27.72469	03	09	54.08	+02	11	23.1		413
3611	1990	11	08.58392	03	00	34.78	+01	16	05.8		413
3611	1990	11	09.59679	02	59	44.23	+01	12	28.3		413
3617	1990	10	20.63919	03	52	20.62	+04	44	33.3		413
3617	1990	10	20.69475	03	52	18.92	+04	44	10.8		413
3811	1990	10	27.44704	22	49	29.92	-00	39	04.7		413
3871	1990	10	20.44120	22	09	33.07	+09	35	12.6		413
3872	1990	10	09.62698	02	51	57.94	-01	25	56.5		413
3872	1990	10	09.68948	02	51	55.44	-01	26	13.7		413
4101	1990	10	27.44704	22	50	42.16	-02	04	37.3		413
4103	1975	03	20.69955	15	13	56.99	-26	57	01.0		413
4103	1975	03	20.76205	15	13	55.75	-26	57	37.5		413
4103	1975	04	19.60587	14	48	57.92	-31	25	48.1		413
4619	1990	10	27.44704	23	10	28.70	-02	33	02.8	V	413

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B. Candela, 533 Chemin des Laugiers, F-83210 Sollies-Pont, France

Observer B. Candela

0.25-m f/8 Schmidt Cassegrain

1990 SQ	1990	11	07.77778	21	23	04.63	+15	23	21.2		479
1990 SQ	1990	11	07.78611	21	23	04.79	+15	23	34.9		479
1990 SQ	1990	11	07.79444	21	23	05.33	+15	24	08.7		479
1990 SQ	1990	11	07.80277	21	23	05.43	+15	24	22.3		479
10	1990	09	06.92153	23	05	03.44	-00	28	32.6		479
40	1990	07	27.97848	21	58	40.02	-17	50	13.6		479
40	1990	07	27.99080	21	58	39.41	-17	50	17.8		479
41	1990	07	12.94306	18	42	48.33	+03	39	53.4		479
41	1990	07	12.94671	18	42	48.38	+03	39	52.6		479
44	1990	08	16.99862	22	16	42.74	-12	35	39.8		479
44	1990	08	17.01181	22	16	41.88	-12	35	43.4		479
51	1990	08	09.92084	21	18	57.83	-05	03	52.7		479
51	1990	08	09.93369	21	18	57.18	-05	03	56.3		479
51	1990	08	15.90926	21	13	41.12	-05	51	30.3		479

51	1990 08	15.92379	21 13	40.32	-05 51	38.1	479
51	1990 08	18.88681	21 11	06.92	-06 16	13.2	479
51	1990 08	18.89896	21 11	06.16	-06 16	20.3	479
58	1990 08	17.99688	21 53	50.53	-10 36	18.1	479
95	1990 08	16.96129	22 34	16.40	+12 05	32.1	479
95	1990 08	16.97639	22 34	15.94	+12 05	28.2	479
148	1990 07	20.95244	19 49	17.10	-02 09	37.1	479
148	1990 07	20.96702	19 49	16.33	-02 09	45.7	479
287	1990 07	28.02119	21 52	07.25	-11 17	48.9	479
287	1990 07	28.03125	21 52	06.78	-11 17	55.8	479
287	1990 08	15.93195	21 36	58.84	-14 16	24.3	479
287	1990 08	15.94584	21 36	58.06	-14 16	33.7	479
374	1990 08	12.03004	22 22	41.85	+03 38	45.5	479
374	1990 08	12.04688	22 22	41.02	+03 38	44.3	479
431	1990 08	22.91737	20 49	40.25	-18 48	57.6	479
431	1990 08	22.93195	20 49	39.55	-18 48	57.6	479
442	1990 08	26.01528	22 33	57.39	-12 48	24.1	479
442	1990 08	26.03195	22 33	56.61	-12 48	34.3	479
485	1990 08	10.92674	21 15	25.58	+01 13	36.9	479
485	1990 08	11.95278	21 14	37.36	+01 07	55.9	479
485	1990 08	11.97570	21 14	36.18	+01 07	49.6	479
485	1990 08	17.92535	21 09	56.84	+00 32	25.2	479
485	1990 08	17.94445	21 09	55.91	+00 32	19.2	479
509	1990 08	10.89332	20 44	31.92	+05 57	18.5	479
509	1990 08	10.91320	20 44	31.03	+05 57	13.9	479
702	1990 08	10.84584	21 28	13.99	+03 01	43.5	479
702	1990 08	10.85556	21 28	13.72	+03 01	43.3	479
702	1990 08	22.95157	21 17	47.92	+03 06	53.5	479
702	1990 08	22.96615	21 17	47.29	+03 06	51.4	479
704	1990 08	11.02223	22 43	46.86	+15 47	48.6	479
704	1990 08	11.03577	22 43	46.36	+15 47	52.3	479
779	1990 08	10.99410	21 54	51.21	+07 22	07.4	479
779	1990 08	11.00903	21 54	50.40	+07 22	12.7	479
779	1990 08	15.98820	21 50	09.56	+07 48	34.5	479
779	1990 08	16.00139	21 50	08.77	+07 48	38.2	479
779	1990 08	23.90035	21 42	30.90	+08 15	22.8	479
779	1990 08	23.91320	21 42	30.14	+08 15	26.3	479
872	1990 08	17.96077	21 06	31.60	-06 41	47.0	479
880	1990 08	18.02848	22 39	06.35	+20 00	44.7	479
880	1990 08	18.05001	22 39	05.48	+20 00	52.3	479

494 Stakenbridge

B. Manning, Moonrakers, Stakenbridge, Churchill, Kidderminster,
Worcs. DY10 3LS, England

1989 TN1	1989 10	31.88568	23 23	55.75	+06 29	07.0	494
1989 TN1	1989 10	31.94421	23 23	55.07	+06 29	11.1	494
243	1990 07	25.03819	23 18	13.82	-04 12	30.2	494
243	1990 07	25.05462	23 18	13.68	-04 12	30.8	494
243	1990 10	12.84229	22 30	53.17	-08 35	04.9	494
243	1990 10	12.85856	22 30	52.87	-08 35	06.1	494
243	1990 10	12.87094	22 30	52.66	-08 35	07.2	494
449	1989 11	29.84956	02 47	31.63	+13 17	09.2	494

552 San Vittore

E. Colombini, Via S. Vittore 44, I-40136 Bologna, Italy

Observers C. Vacchi, G. Sassi, R. di Luca

Measurers R. di Luca, V. Goretti, E. Colombini

AGK3, SAOC

0.25-m f/2.5 Schmidt and (1) 0.45-m f/5 reflector

1988 CK	1990 11 13.90278	02 24 12.40	+31 07 05.5	15.5	1 552
1988 CK	1990 11 13.92500	02 24 10.75	+31 06 58.5		1 552
1988 CK	1990 11 19.88333	02 17 59.89	+30 34 50.8		1 552
1988 CK	1990 11 19.90694	02 17 58.42	+30 34 41.8		1 552
1990 VJ2	1990 11 19.93819	04 04 39.94	+21 48 08.5	15.5	552
1990 VJ2	1990 11 19.96597	04 04 38.15	+21 47 59.2		552

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

AGK3

1990 VC	* 1990 11 08.84791	01 59 09.57	+16 58 45.5	18.5	567
1990 VC	1990 11 08.86458	01 59 08.62	+16 58 36.3		567
1990 VC	1990 11 09.87292	01 58 21.42	+16 48 37.7		567
1990 VC	1990 11 09.88819	01 58 20.47	+16 48 28.2		567
1990 VC	1990 11 10.87430	01 57 35.37	+16 38 48.0		567
1990 VC	1990 11 10.89514	01 57 34.34	+16 38 35.8		567

589 Santa Lucia Stroncone

A. Vagnozzi, Santa Lucia 68, I-05039 Stroncone (Terni), Italy

Observers A. Vagnozzi, G. C. Morando, S. Casulli, R. Castellani

0.5-m f/7.5 Ritchey-Chretien

SAOC

1990 SQ	1990 10 15.75557	21 22 40.08	-03 58 36.7		589
1990 SQ	1990 10 15.76251	21 22 39.76	-03 58 17.6		589
1990 SQ	1990 10 15.76946	21 22 39.43	-03 57 55.2		589
1990 SQ	1990 10 15.79757	21 22 37.72	-03 56 26.8		589
1990 SQ	1990 10 15.80451	21 22 37.40	-03 56 07.1		589
1990 SQ	1990 10 15.81146	21 22 37.02	-03 55 45.8		589
1990 SQ	1990 10 22.84168	21 18 52.74	+02 06 33.3		589
1990 SQ	1990 10 22.84861	21 18 52.65	+02 06 53.6		589
1990 SQ	1990 10 22.85555	21 18 52.60	+02 07 12.9		589

675 Palomar

J. Gibson, OAO Corporation and Jet Propulsion Laboratory, MS 238-332, Pasadena, CA 91109, U.S.A. (1)

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 T. Gehrels (4, L), J. Gibson (1, C), E. Helin (2, S), H. E. Holt (3, S), H. R. Holt (3, S), D. H. Levy (3, S), K. Lawrence (2, S), C. M. Olmstead (3, S), B. Roman (2, S), P. Rose (2, S), C. S. Shoemaker (3, S), E. M. Shoemaker (3, S)

Measurers E. Bowell (6), E. Dyer (3), J. Gibson (1), K. Lawrence (2), C. M. Olmstead (6), B. Roman (2), P. Rose (2), C. S. Shoemaker (2), C. J. van Houten (4), I. van Houten-Groeneveld (4), A. Wisse (4)

1.5-m reflector + CCD (C), 1.2-m (L) and 0.46-m (S) Schmidt telescopes

1957 UK1	1990 09 13.31979	22 26 25.60	-08 44 48.0	17.8	9 675
1957 UK1	1990 09 13.35122	22 26 24.22	-08 44 58.3		9 675
1957 UK1	1990 09 18.19097	22 23 02.33	-09 07 56.2		9 675
1957 UK1	1990 09 18.22222	22 23 01.08	-09 08 05.5		9 675
1976 GJ2	1990 10 21.09983	21 33 36.58	-04 20 41.8	17.8	9 675

1976	GJ2	1990	10	21.14184	21	33	37.78	-04	20	52.4		9	675
1976	GO3	1990	09	13.31979	22	56	11.60	-09	40	30.0	18.2	9	675
1976	GO3	1990	09	13.35122	22	56	10.08	-09	40	39.6		9	675
1976	WC	1990	09	13.31979	22	40	32.33	-08	07	51.9		9	675
1976	WC	1990	09	13.35122	22	40	30.60	-08	08	21.4		9	675
1976	WC	1990	09	18.19097	22	36	12.02	-09	23	19.4		9	675
1976	WC	1990	09	18.22222	22	36	10.41	-09	23	48.7		9	675
1977	QF1	1990	09	14.33073	23	30	29.35	-05	11	21.9	15.8	9	675
1977	QF1	1990	09	14.36858	23	30	26.80	-05	11	16.9		9	675
1977	QF1	1990	09	20.33009	23	24	00.95	-04	57	27.4	16.0	9	675
1977	QF1	1990	09	20.36094	23	23	58.90	-04	57	23.6		9	675
1979	SS	1990	09	13.31979	22	34	42.82	-06	43	34.5	16.8	9	675
1979	SS	1990	09	13.35122	22	34	41.03	-06	43	35.8		9	675
1979	SS	1990	09	18.19097	22	30	30.79	-06	44	11.3	17.0	9	675
1979	SS	1990	09	18.22222	22	30	29.14	-06	44	12.3		9	675
1979	WX3	1990	09	14.33073	23	38	03.16	-05	23	50.9	16.8	9	675
1979	WX3	1990	09	14.36858	23	38	01.18	-05	24	05.5		9	675
1979	WX3	1990	09	20.33009	23	33	00.85	-06	02	16.3	16.8	9	675
1979	WX3	1990	09	20.36094	23	32	59.24	-06	02	28.1		9	675
1980	RJ	1990	09	18.19097	22	52	59.59	-08	38	05.6		9	675
1980	RJ	1990	09	18.22222	22	52	57.55	-08	38	07.4		9	675
1981	QX	1990	10	20.47135	04	08	33.88	+08	04	58.2	18.5	9	675
1981	QX	1990	10	20.50712	04	08	32.49	+08	04	45.1		9	675
1981	QX	1990	10	22.43802	04	07	21.98	+07	52	36.1	18.0	9	675
1981	QX	1990	10	22.49566	04	07	19.51	+07	52	15.5		9	675
1981	RA2	1990	10	15.23194	00	23	08.35	+21	28	53.5	16.5	2	675
1981	RA2	1990	10	15.26059	00	23	07.14	+21	28	33.6		2	675
1981	RA2	1990	10	19.17500	00	20	48.82	+20	44	32.0		2	675
1982	ST	1989	03	04.33003	11	12	29.97	+03	07	31.0	16.0	2	675
1982	ST	1989	03	04.36302	11	12	26.72	+03	07	24.2		2	675
1982	ST	1989	03	06.29549	11	09	19.88	+03	00	33.6		2	675
1982	ST	1989	03	06.34028	11	09	15.31	+03	00	24.1		2	675
1985	PJ	1990	09	13.31979	22	36	02.56	-08	31	40.2		9	675
1985	PJ	1990	09	13.35122	22	36	01.10	-08	31	48.2		9	675
1985	PJ	1990	09	18.19097	22	32	30.41	-08	49	48.9	17.5	9	675
1985	PJ	1990	09	18.22222	22	32	29.04	-08	49	56.2		9	675
1985	QM5	1990	09	14.33073	23	29	58.36	-04	58	31.8	17.5	9	675
1985	QM5	1990	09	14.36858	23	29	56.54	-04	58	44.9		9	675
1985	QM5	1990	09	20.33009	23	25	31.58	-05	33	28.7	17.5	9	675
1985	QM5	1990	09	20.36094	23	25	30.23	-05	33	38.5		9	675
1985	RC4	1990	09	20.33009	23	45	34.69	-04	17	48.9	17.0	9	675
1985	RC4	1990	09	20.36094	23	45	33.25	-04	17	59.9		9	675
1986	GY	1990	09	14.33073	23	40	29.55	-04	59	56.3	16.5	9	675
1986	GY	1990	09	14.36858	23	40	27.21	-05	00	04.1		9	675
1986	GY	1990	09	20.33009	23	34	36.95	-05	19	38.3	16.5	9	675
1986	GY	1990	09	20.36094	23	34	35.07	-05	19	44.5		9	675
1988	BL	1990	10	20.47135	03	37	43.44	+09	11	01.0	16.5	9	675
1988	BL	1990	10	20.50712	03	37	42.12	+09	10	49.7		9	675
1988	BL	1990	10	22.43802	03	36	35.57	+09	00	45.7	16.5	9	675
1988	BL	1990	10	22.49566	03	36	33.31	+09	00	27.2		9	675
1988	EF	1990	10	21.09983	21	21	04.67	-00	09	23.5	18.2	9	675
1988	EF	1990	10	21.14184	21	21	05.26	-00	09	48.7		9	675
1988	EF	1990	10	23.15069	21	21	39.35	-00	29	07.5	18.5	9	675
1988	QD1	1988	09	10.20885	21	28	46.63	+21	17	31.3	15.4	3	675
1988	QD1	1988	09	12.15400	21	28	28.21	+20	58	59.0	15.4	3	675
1988	QD1	1988	09	13.19514	21	28	21.13	+20	48	38.0		3	675
1988	RV	1989	09	24.39080	00	11	46.22	+05	26	18.9	17.8	3	675
1988	RV	1989	11	02.23872	23	53	54.53	+04	19	41.8	18	3	675
1988	RK1	1989	11	03.33198	02	41	57.92	+11	30	55.6		3	675

1988	RK1	1989	11	03.36493	02	41	56.85	+11	30	54.2		3	675
1988	RK1	1989	11	22.32447	02	31	47.91	+11	06	25.0		3	675
1988	RK1	1989	11	22.35799	02	31	46.87	+11	06	23.0	17.9	3	675
1988	TZ1	1990	11	11.42951	05	41	01.14	+41	05	48.0	18.3	3	675
1988	TZ1	1990	11	13.49027	05	40	00.99	+41	06	01.8		3	675
1989	CJ1	1990	11	18.27726	02	40	54.03	-37	30	54.5	16.3	2	675
1989	CJ1	1990	11	18.30503	02	40	52.36	-37	30	42.0		2	675
1989	EL1	1990	09	13.31979	22	32	52.71	-05	43	19.6	17.8	9	675
1989	EL1	1990	09	13.35122	22	32	51.30	-05	43	36.8		9	675
1989	EL1	1990	09	18.19097	22	29	30.57	-06	25	08.0		9	675
1989	EL1	1990	09	18.22222	22	29	29.18	-06	25	23.8		9	675
1989	GO	1987	11	19.31788	03	17	06.44	+17	04	39.1	16.5	2	675
1989	GO	1987	11	19.34097	03	17	04.99	+17	04	35.4		2	675
1989	GO	1987	11	20.40556	03	15	57.08	+17	01	37.6		2	675
1989	GO	1987	11	20.44323	03	15	54.75	+17	01	30.8		2	675
1989	NB1	1990	10	17.33160	02	21	48.14	-11	43	50.6	16.7	2	675
1989	NB1	1990	10	17.35451	02	21	47.15	-11	43	57.5		2	675
1989	UQ	1989	12	11.10303	23	30	06.94	-09	36	41.6		1	675
1989	UQ	1989	12	11.10828	23	30	06.64	-09	36	42.7		1	675
1989	UQ	1989	12	11.11397	23	30	06.32	-09	36	43.8		1	675
1989	UQ	1989	12	13.11455	23	28	45.49	-09	42	20.0		1	675
1989	UQ	1989	12	13.12057	23	28	45.14	-09	42	20.7		1	675
1989	UQ	1989	12	13.12631	23	28	44.86	-09	42	21.4		1	675
1989	UQ	1990	01	07.10479	23	07	38.18	-11	15	45.1	21.5R	1	675
1989	UQ	1990	01	07.12190	23	07	36.35	-11	15	51.5		1	675
1990	HF1	1990	05	27.27534	15	24	10.83	+13	32	46.5	17.2	3	675
1990	HF1	1990	05	27.32222	15	24	08.77	+13	32	41.6		3	675
1990	KD	1990	05	27.26701	15	28	01.84	+01	00	04.4	17.5	3	675
1990	KD	1990	05	27.31371	15	27	59.21	+00	59	43.1		3	675
1990	MB	1979	11	21.16250	02	36	39.48	+27	30	27.9		2	675
1990	MB	1979	11	21.18333	02	36	38.31	+27	29	38.7		2	675
1990	MB	1979	11	24.23750	02	34	15.85	+25	25	09.3		2	675
1990	MB	1979	11	24.25833	02	34	14.87	+25	24	21.6		2	675
1990	OH	1990	10	23.10868	21	10	35.51	-01	17	19.5	17.5	9	675
1990	OH	1990	10	23.15069	21	10	38.84	-01	17	37.3		9	675
1990	OA1	1990	10	23.10868	21	12	14.72	+03	35	02.8	17.2	9	675
1990	OA1	1990	10	23.15069	21	12	16.13	+03	34	54.7		9	675
1990	OB4	1990	10	23.10868	21	24	09.16	+02	15	00.5	17.2	9	675
1990	OB4	1990	10	23.15069	21	24	11.27	+02	14	57.1		9	675
1990	QB	1990	10	21.14184	21	25	47.33	-00	55	08.7	17.0	9	675
1990	QZ1	1990	09	14.33073	23	13	01.10	-04	14	59.3	17.5	9	675
1990	QZ1	1990	09	14.36858	23	12	58.67	-04	15	05.0		9	675
1990	QB2	1990	09	14.33073	23	19	13.62	-04	16	35.1	16.5	9	675
1990	QB2	1990	09	14.36858	23	19	11.76	-04	16	50.7		9	675
1990	QB2	1990	09	20.33009	23	14	45.16	-04	57	09.8	16.8	9	675
1990	QB2	1990	09	20.36094	23	14	43.71	-04	57	22.0		9	675
1990	QC2	1990	09	14.33073	23	18	23.78	-05	40	23.5	17.0	9	675
1990	QC2	1990	09	14.36858	23	18	21.70	-05	40	44.8		9	675
1990	QE2	1990	09	14.33073	23	15	14.23	-02	00	26.4	16.8	9	675
1990	QE2	1990	09	14.36858	23	15	11.75	-02	00	32.9		9	675
1990	QG2	1990	09	14.33073	23	24	23.69	-05	36	22.3	16.8	9	675
1990	QG2	1990	09	14.36858	23	24	22.13	-05	36	43.2		9	675
1990	QG2	1990	09	20.33009	23	20	25.21	-06	28	23.1	17.0	9	675
1990	QH2	1990	09	14.33073	23	19	17.55	-05	31	18.3	17.0	9	675
1990	QH2	1990	09	14.36858	23	19	15.23	-05	31	23.8		9	675
1990	QJ2	1990	09	14.33073	23	21	13.52	-06	38	13.5	17.5	9	675
1990	QJ2	1990	09	14.36858	23	21	11.16	-06	38	25.7		9	675
1990	QL2	1990	09	14.33073	23	25	06.51	-05	50	03.0	16.2	9	675
1990	QL2	1990	09	14.36858	23	25	04.54	-05	50	24.7		9	675

1990	QL2	1990	09	20.33009	23	20	12.39	-06	45	40.9	16.2	9	675
1990	QL2	1990	09	20.36094	23	20	10.77	-06	45	58.0		9	675
1990	QN2	1990	09	14.33073	23	23	27.22	-02	42	55.4	17.0	9	675
1990	QN2	1990	09	14.36858	23	23	24.70	-02	42	59.2		9	675
1990	QN2	1990	09	20.33009	23	17	21.01	-02	49	46.3	17.0	9	675
1990	QN2	1990	09	20.36094	23	17	19.05	-02	49	48.9		9	675
1990	QP2	1990	09	14.33073	23	46	15.61	-01	48	01.4	16.8	9	675
1990	QP2	1990	09	14.36858	23	46	13.76	-01	48	11.9		9	675
1990	QP2	1990	09	20.33009	23	41	24.88	-02	15	31.1	17.2	9	675
1990	QP2	1990	09	20.36094	23	41	23.38	-02	15	40.3		9	675
1990	QU2	1990	09	14.33073	23	35	29.54	-05	22	40.2	17.0	9	675
1990	QU2	1990	09	14.36858	23	35	28.25	-05	23	12.1		9	675
1990	QU2	1990	09	20.33009	23	32	29.88	-06	45	15.7	17.0	9	675
1990	QU2	1990	09	20.36094	23	32	28.92	-06	45	39.2		9	675
1990	QV2	1990	09	14.33073	23	35	49.49	-01	13	06.0	17.2	9	675
1990	QV2	1990	09	14.36858	23	35	47.89	-01	13	25.3		9	675
1990	QV2	1990	09	20.33009	23	31	43.19	-02	04	28.8	16.8	9	675
1990	QV2	1990	09	20.36094	23	31	41.90	-02	04	45.7		9	675
1990	QJ3	1990	09	14.33073	23	14	29.00	-04	52	22.7	17.5	9	675
1990	QJ3	1990	09	14.36858	23	14	26.68	-04	52	25.7		9	675
1990	QL3	1990	09	14.33073	23	20	53.95	-03	53	10.4	17.0	9	675
1990	QL3	1990	09	14.36858	23	20	51.71	-03	53	14.4		9	675
1990	QL3	1990	09	20.33009	23	15	08.03	-04	05	41.5	17.0	9	675
1990	QL3	1990	09	20.36094	23	15	06.20	-04	05	45.7		9	675
1990	QM3	1990	09	14.33073	23	22	39.30	-04	34	45.7	17.2	9	675
1990	QM3	1990	09	14.36858	23	22	36.83	-04	34	47.5		9	675
1990	QM3	1990	09	20.33009	23	16	28.20	-04	37	00.2	18.0	9	675
1990	QM3	1990	09	20.36094	23	16	26.25	-04	37	00.1		9	675
1990	QY3	1990	09	18.19097	22	53	28.58	-06	08	37.0	17.8	9	675
1990	QY3	1990	09	18.22222	22	53	26.85	-06	08	45.4		9	675
1990	QA4	1990	09	13.31979	22	31	08.53	-08	37	24.9	17.8	9	675
1990	QA4	1990	09	13.35122	22	31	06.70	-08	37	30.1		9	675
1990	QB4	1990	09	13.31979	22	37	37.88	-09	25	55.1	17.5	9	675
1990	QB4	1990	09	13.35122	22	37	36.62	-09	26	06.2		9	675
1990	QE4	1990	09	13.31979	22	47	27.58	-12	19	03.9	16.5	9	675
1990	QE4	1990	09	13.35122	22	47	26.75	-12	19	35.8		9	675
1990	QF4	1990	09	13.31979	22	39	57.56	-11	14	26.0	17.0	9	675
1990	QF4	1990	09	13.35122	22	39	55.93	-11	14	41.9		9	675
1990	QF4	1990	09	18.19097	22	36	03.82	-11	52	02.6	17.8	9	675
1990	QF4	1990	09	18.22222	22	36	02.31	-11	52	16.3		9	675
1990	QH4	1990	09	13.31979	22	40	53.39	-08	38	47.4	17.5	9	675
1990	QH4	1990	09	13.35122	22	40	51.63	-08	38	47.3		9	675
1990	QJ4	1990	09	13.31979	22	46	12.15	-08	34	36.8	17.0	9	675
1990	QJ4	1990	09	13.35122	22	46	10.60	-08	34	49.2		9	675
1990	QJ4	1990	09	18.19097	22	42	29.99	-09	04	11.3	18.2	9	675
1990	QJ4	1990	09	18.22222	22	42	28.44	-09	04	23.4		9	675
1990	QK4	1990	09	13.31979	22	50	17.84	-08	21	07.4	16.8	9	675
1990	QK4	1990	09	13.35122	22	50	16.39	-08	21	19.9		9	675
1990	QK4	1990	09	18.19097	22	47	00.76	-08	53	25.8	17.2	9	675
1990	QK4	1990	09	18.22222	22	46	59.46	-08	53	38.1		9	675
1990	QL4	1990	09	13.31979	22	51	14.03	-09	06	29.0	17.0	9	675
1990	QL4	1990	09	13.35156	22	51	12.38	-09	06	32.8		9	675
1990	QM4	1990	09	13.31979	22	50	44.09	-11	59	08.7	16.8	9	675
1990	QM4	1990	09	13.35122	22	50	42.39	-11	59	22.6		9	675
1990	QM4	1990	09	18.19097	22	46	45.45	-12	33	03.4	17.0	9	675
1990	QM4	1990	09	18.22222	22	46	43.86	-12	33	14.9		9	675
1990	QN4	1990	09	18.19097	22	53	43.82	-06	26	36.1	16.8	9	675
1990	QN4	1990	09	18.22222	22	53	42.48	-06	26	49.2		9	675
1990	QO4	1990	09	13.31979	22	54	52.45	-09	35	28.4	17.8	9	675

1990	QO4	1990	09	18.19097	22	50	49.12	-09	41	49.9	18.0	9	675	
1990	QO4	1990	09	18.22222	22	50	47.50	-09	41	52.4		9	675	
1990	QP4	1990	09	18.19097	22	54	44.63	-06	50	19.6	18.5	9	675	
1990	QP4	1990	09	18.22222	22	54	43.02	-06	50	26.7		9	675	
1990	QC5	1990	09	13.31979	22	50	16.61	-10	46	24.4	16.8	9	675	
1990	QC5	1990	09	13.35122	22	50	14.66	-10	46	30.2		9	675	
1990	QC5	1990	09	18.19097	22	45	43.13	-11	00	10.9	16.8	9	675	
1990	QC5	1990	09	18.22222	22	45	41.38	-11	00	15.9		9	675	
1990	QE5	1990	09	13.31979	22	53	44.78	-10	33	01.5	17.5	9	675	
1990	QE5	1990	09	13.35122	22	53	42.86	-10	33	02.4		9	675	
1990	QE5	1990	09	18.19097	22	49	06.48	-10	35	36.4	18.0	9	675	
1990	QE5	1990	09	18.22222	22	49	04.62	-10	35	36.7		9	675	
1990	QF5	1990	09	18.19097	22	53	24.92	-09	51	03.9	18.0	9	675	
1990	QF5	1990	09	18.22222	22	53	23.40	-09	51	04.6		9	675	
1990	QR5	1990	09	13.31979	22	39	42.22	-11	05	43.7	16.8	9	675	
1990	QR5	1990	09	13.35122	22	39	40.90	-11	05	52.7		9	675	
1990	QR5	1990	09	18.19097	22	36	32.78	-11	26	44.0	18.0	9	675	
1990	QR5	1990	09	18.22222	22	36	31.67	-11	26	51.9		9	675	
1990	QV5	1990	09	13.31979	22	24	20.73	-08	50	39.3	16.5	9	675	
1990	QV5	1990	09	13.35122	22	24	19.16	-08	50	52.2		9	675	
1990	QZ5	1990	09	13.31979	22	35	21.31	-09	51	36.0	17.5	9	675	
1990	QZ5	1990	09	13.35122	22	35	19.85	-09	51	52.8		9	675	
1990	QZ5	1990	09	18.19097	22	32	11.49	-10	37	01.7	17.0	9	675	
1990	QZ5	1990	09	18.22222	22	32	10.22	-10	37	19.4		9	675	
1990	QA6	1990	09	13.31979	22	32	46.72	-10	16	17.0	16.5	9	675	
1990	QA6	1990	09	13.35122	22	32	44.92	-10	16	19.3		9	675	
1990	QA6	1990	09	18.19097	22	28	39.03	-10	20	09.9	17.0	9	675	
1990	QA6	1990	09	18.22222	22	28	37.49	-10	20	10.5		9	675	
1990	QC6	1990	09	13.31979	22	54	02.97	-08	23	55.3	16.5	9	675	
1990	QC6	1990	09	13.35122	22	54	01.15	-08	24	06.8		9	675	
1990	QC6	1990	09	18.19097	22	49	41.21	-08	50	41.1	18.0	9	675	
1990	QC6	1990	09	18.22222	22	49	39.43	-08	50	49.8		9	675	
1990	QJ6	1990	09	18.19097	22	56	19.00	-07	50	01.0	18.2	9	675	
1990	QJ6	1990	09	18.22222	22	56	17.57	-07	50	10.5		9	675	
1990	QW6	1990	08	23.43941	23	22	36.26	-08	01	57.8	17.5	9	675	
1990	QW6	1990	08	23.47517	23	22	34.65	-08	02	18.0		9	675	
1990	QC7	1990	09	14.32222	23	10	12.42	-06	03	45.4	17.8	9	675	
1990	QC7	1990	09	14.35938	23	10	10.72	-06	03	55.9		9	675	
1990	QN7	1990	09	14.32222	23	09	43.06	-09	28	15.2	17.2	9	675	
1990	QN7	1990	09	14.35938	23	09	40.85	-09	28	25.5		9	675	
1990	QY7	1990	09	13.31979	22	22	48.18	-08	49	53.7	17.0	9	675	
1990	QY7	1990	09	13.35122	22	22	46.37	-08	50	00.8		9	675	
1990	QD8	1990	09	13.31979	22	35	21.22	-10	50	38.3	17.8	9	675	
1990	QD8	1990	09	13.35122	22	35	19.99	-10	50	49.9		9	675	
1990	QD8	1990	09	18.19097	22	32	22.46	-11	18	55.4	18.2	9	675	
1990	QD8	1990	09	18.22222	22	32	21.28	-11	19	05.9		9	675	
1990	QX8	1990	09	13.31979	22	36	51.02	-10	51	35.3	18.2	9	675	
1990	QX8	1990	09	13.35122	22	36	49.61	-10	51	42.9		9	675	
1990	QX8	1990	09	18.19097	22	33	16.51	-11	07	52.0	18.0	9	675	
1990	QX8	1990	09	18.22222	22	33	15.08	-11	07	57.6		9	675	
1990	QA9	1990	08	26.36111	22	55	14.70	-11	04	47.1	17.0	9	675	
1990	QA9	1990	08	26.39948	22	55	13.02	-11	04	58.0		9	675	
1990	QA9	1990	09	18.19097	22	39	07.76	-12	35	20.0	17.0	9	675	
1990	QA9	1990	09	18.22222	22	39	06.80	-12	35	23.2		9	675	
1990	QE9	1990	08	29.40694	22	53	01.02	-07	47	05.6	17.5	9	675	
1990	QE9	1990	08	29.44375	22	52	59.20	-07	47	15.6		9	675	
1990	QT9	*	1990	08	23.43941	23	11	03.12	-07	26	38.6	17.0	9	675
1990	QT9		1990	08	23.47517	23	11	01.26	-07	26	53.4		9	675
1990	QT9		1990	09	13.31979	22	52	00.07	-09	42	19.6	16.5	9	675

1990	QT9	1990	09	13.35122	22	51	58.35	-09	42	30.8		9	675	
1990	QT9	1990	09	18.19097	22	47	50.68	-10	09	09.2	16.8	9	675	
1990	QT9	1990	09	18.22222	22	47	49.01	-10	09	18.6		9	675	
1990	QU9	*	1990	08	26.36111	23	09	27.64	-10	53	01.0	17.2	9	675
1990	QU9		1990	08	26.39948	23	09	25.56	-10	53	01.7		9	675
1990	QU9		1990	09	13.31979	22	53	02.63	-10	58	10.0	17.5	9	675
1990	QU9		1990	09	13.35122	22	53	00.95	-10	58	09.3		9	675
1990	QU9		1990	09	18.19097	22	48	46.18	-10	56	34.1	18.0	9	675
1990	QU9		1990	09	18.22222	22	48	44.51	-10	56	32.8		9	675
1990	QV9	*	1990	08	29.40694	22	53	01.02	-07	47	05.6	17.5	9	675
1990	QV9		1990	08	29.44375	22	52	59.20	-07	47	15.6		9	675
1990	QV9		1990	09	13.31979	22	41	07.00	-08	58	17.2	17.2	9	675
1990	QV9		1990	09	13.35122	22	41	05.46	-08	58	25.2		9	675
1990	QW9	*	1990	08	24.43177	23	40	41.59	+00	21	23.0	17.5	9	675
1990	QW9		1990	08	24.46788	23	40	40.23	+00	21	00.6		9	675
1990	QW9		1990	09	14.33073	23	25	48.95	-03	44	37.1	17.0	9	675
1990	QW9		1990	09	14.36858	23	25	47.13	-03	45	04.9		9	675
1990	QW9		1990	09	20.33009	23	21	20.83	-04	54	51.8	17.2	9	675
1990	QW9		1990	09	20.36094	23	21	19.41	-04	55	13.3		9	675
1990	QX9	*	1990	08	29.46160	23	58	57.31	-02	51	56.1	17.0	9	675
1990	QX9		1990	08	29.49927	23	58	55.53	-02	51	55.0		9	675
1990	QX9		1990	09	14.33073	23	43	27.27	-02	48	43.1	17.2	9	675
1990	QX9		1990	09	14.36858	23	43	24.69	-02	48	43.7		9	675
1990	QX9		1990	09	20.33009	23	37	11.21	-02	49	00.6	16.5	9	675
1990	QX9		1990	09	20.36094	23	37	09.28	-02	49	01.7		9	675
1990	RN		1990	09	14.33073	23	24	15.11	-06	53	32.5	17.0	9	675
1990	RN		1990	09	14.36858	23	24	12.59	-06	53	29.5		9	675
1990	RP	*	1990	09	13.31979	22	44	36.60	-05	34	24.6	17.8	9	675
1990	RP		1990	09	13.35122	22	44	34.94	-05	34	34.5		9	675
1990	RP		1990	09	18.19097	22	40	59.53	-05	56	26.0	18.2	9	675
1990	RP		1990	09	18.22222	22	40	58.10	-05	56	34.1		9	675
1990	RQ	*	1990	09	13.31979	22	45	53.76	-09	58	44.3	17.2	9	675
1990	RQ		1990	09	13.35122	22	45	51.77	-09	58	50.3		9	675
1990	RQ		1990	09	18.19097	22	40	59.40	-10	12	12.9	17.8	9	675
1990	RQ		1990	09	18.22222	22	40	57.51	-10	12	18.0		9	675
1990	RR	*	1990	09	13.31979	22	47	01.83	-10	19	40.7	16.8	9	675
1990	RR		1990	09	13.35122	22	47	00.41	-10	19	57.8		9	675
1990	RR		1990	09	18.19097	22	43	39.77	-11	02	10.3	16.8	9	675
1990	RR		1990	09	18.22222	22	43	38.41	-11	02	25.9		9	675
1990	RS	*	1990	09	13.31979	22	47	48.59	-09	05	57.0	16.8	9	675
1990	RS		1990	09	13.35122	22	47	46.53	-09	05	55.3		9	675
1990	RS		1990	09	18.19097	22	42	47.93	-08	59	27.8	18.0	9	675
1990	RS		1990	09	18.22222	22	42	45.95	-08	59	25.1		9	675
1990	RT	*	1990	09	13.31979	22	52	01.99	-07	49	28.4	16.5	9	675
1990	RT		1990	09	13.35122	22	52	00.66	-07	49	45.5		9	675
1990	RT		1990	09	18.19097	22	48	51.81	-08	29	49.3	17.8	9	675
1990	RT		1990	09	18.22222	22	48	50.54	-08	30	04.3		9	675
1990	RU	*	1990	09	13.31979	22	52	54.92	-07	41	24.2	16.5	9	675
1990	RU		1990	09	13.35122	22	52	53.57	-07	41	43.0		9	675
1990	RU		1990	09	18.19097	22	49	58.06	-08	27	00.3	17.8	9	675
1990	RU		1990	09	18.22222	22	49	56.93	-08	27	17.0		9	675
1990	RV	*	1990	09	13.31979	22	55	46.63	-09	44	34.0	18.2	9	675
1990	RV		1990	09	13.35122	22	55	45.31	-09	44	43.6		9	675
1990	RV		1990	09	18.19097	22	52	18.03	-10	07	09.9	18.2	9	675
1990	RV		1990	09	18.22222	22	52	16.61	-10	07	17.1		9	675
1990	RW	*	1990	09	14.32222	22	58	01.39	-06	50	21.4	17.2	9	675
1990	RW		1990	09	14.35938	22	57	59.98	-06	50	29.2		9	675
1990	RW		1990	09	18.19097	22	55	39.14	-07	03	37.9	18.0	9	675
1990	RW		1990	09	18.22222	22	55	38.04	-07	03	45.7		9	675

1990 RX *	1990 09 14.32222	23 21 38.14	-04 19 20.5	16.5	9 675
1990 RX	1990 09 14.33073	23 21 37.84	-04 19 24.7	16.5	9 675
1990 RX	1990 09 14.35938	23 21 36.23	-04 19 39.1		9 675
1990 RX	1990 09 14.36858	23 21 35.87	-04 19 44.6		9 675
1990 RX	1990 09 20.33009	23 16 52.65	-05 11 41.4	17.0	9 675
1990 RX	1990 09 20.36094	23 16 51.21	-05 11 57.5		9 675
1990 RY *	1990 09 14.33073	23 19 24.04	-01 39 38.2	17.5	9 675
1990 RY	1990 09 14.36858	23 19 22.10	-01 39 53.2		9 675
1990 RY	1990 09 20.33009	23 15 40.02	-02 04 39.5	17.2	9 675
1990 RY	1990 09 20.36094	23 15 38.50	-02 04 51.7		9 675
1990 RZ *	1990 09 14.33073	23 24 14.90	-01 40 24.9	17.2	9 675
1990 RZ	1990 09 14.36858	23 24 13.05	-01 40 38.8		9 675
1990 RZ	1990 09 20.33009	23 19 34.93	-02 17 27.6	17.2	9 675
1990 RZ	1990 09 20.36094	23 19 33.44	-02 17 39.7		9 675
1990 RA1 *	1990 09 14.33073	23 27 19.70	-02 03 44.9	17.0	9 675
1990 RA1	1990 09 14.36858	23 27 17.98	-02 03 57.0		9 675
1990 RA1	1990 09 20.33009	23 23 00.89	-02 35 17.9	17.2	9 675
1990 RA1	1990 09 20.36094	23 22 59.56	-02 35 29.1		9 675
1990 RB1 *	1990 09 14.33073	23 27 47.61	-03 12 20.9	17.2	9 675
1990 RB1	1990 09 14.36858	23 27 46.13	-03 12 42.1		9 675
1990 RB1	1990 09 20.33009	23 24 02.58	-04 08 46.5	17.5	9 675
1990 RB1	1990 09 20.36094	23 24 01.40	-04 09 04.8		9 675
1990 RC1 *	1990 09 14.33073	23 29 05.33	-04 57 23.4	17.2	9 675
1990 RC1	1990 09 14.36858	23 29 03.16	-04 57 27.3		9 675
1990 RC1	1990 09 20.33009	23 23 32.68	-05 07 48.5	17.5	9 675
1990 RC1	1990 09 20.36094	23 23 30.94	-05 07 52.5		9 675
1990 RD1 *	1990 09 14.33073	23 31 26.95	-03 43 36.2	17.2	9 675
1990 RD1	1990 09 14.36858	23 31 25.38	-03 43 52.8		9 675
1990 RD1	1990 09 20.33009	23 27 25.35	-04 27 45.4	17.0	9 675
1990 RD1	1990 09 20.36094	23 27 24.06	-04 27 59.9		9 675
1990 RE1 *	1990 09 14.33073	23 32 37.52	-05 56 10.2	16.5	9 675
1990 RE1	1990 09 14.36858	23 32 35.85	-05 56 22.9		9 675
1990 RE1	1990 09 20.33009	23 28 20.50	-06 27 31.3	16.5	9 675
1990 RE1	1990 09 20.36094	23 28 19.11	-06 27 41.2		9 675
1990 RF1 *	1990 09 14.33073	23 33 06.55	-01 45 10.9	17.5	9 675
1990 RF1	1990 09 14.36858	23 33 04.79	-01 45 23.4		9 675
1990 RF1	1990 09 20.33009	23 28 37.88	-02 15 29.0	17.5	9 675
1990 RF1	1990 09 20.36094	23 28 36.47	-02 15 39.5		9 675
1990 RG1 *	1990 09 14.33073	23 34 13.30	-05 09 18.6	17.0	9 675
1990 RG1	1990 09 14.36858	23 34 10.92	-05 09 14.5		9 675
1990 RG1	1990 09 20.33009	23 28 08.28	-04 56 59.1	17.0	9 675
1990 RG1	1990 09 20.36094	23 28 06.26	-04 56 55.1		9 675
1990 RH1 *	1990 09 14.33073	23 34 45.86	-01 25 10.2	17.5	9 675
1990 RH1	1990 09 14.36858	23 34 43.85	-01 25 18.4		9 675
1990 RH1	1990 09 20.33009	23 29 40.15	-01 47 31.9	17.5	9 675
1990 RH1	1990 09 20.36094	23 29 38.60	-01 47 39.3		9 675
1990 RJ1 *	1990 09 14.33073	23 36 06.81	-02 30 09.5	17.2	9 675
1990 RJ1	1990 09 14.36858	23 36 03.85	-02 29 58.8		9 675
1990 RJ1	1990 09 20.33009	23 28 39.13	-02 05 20.5	17.5	9 675
1990 RJ1	1990 09 20.36094	23 28 36.81	-02 05 13.5		9 675
1990 RK1 *	1990 09 14.33073	23 38 17.37	-05 05 50.6	16.8	9 675
1990 RK1	1990 09 14.36858	23 38 14.85	-05 05 46.3		9 675
1990 RK1	1990 09 20.33009	23 31 49.43	-04 54 58.9	16.8	9 675
1990 RK1	1990 09 20.36094	23 31 47.35	-04 54 56.0		9 675
1990 RL1 *	1990 09 14.33073	23 41 02.21	-05 34 52.8	17.0	9 675
1990 RL1	1990 09 14.36858	23 41 00.27	-05 35 13.8		9 675
1990 RL1	1990 09 20.33009	23 36 15.22	-06 29 22.9	17.2	9 675
1990 RL1	1990 09 20.36094	23 36 13.72	-06 29 40.9		9 675
1990 RM1 *	1990 09 14.33073	23 41 06.58	-05 28 36.1	17.2	9 675

1990 RM1	1990 09 14.36858	23 41 03.99	-05 28 30.2		9 675
1990 RM1	1990 09 20.33009	23 34 32.10	-05 13 46.6	17.2	9 675
1990 RM1	1990 09 20.36094	23 34 29.97	-05 13 41.6		9 675
1990 RN1 *	1990 09 14.33073	23 44 00.38	-05 15 49.5	17.0	9 675
1990 RN1	1990 09 14.36858	23 43 58.16	-05 15 52.2		9 675
1990 RN1	1990 09 20.33009	23 38 23.11	-05 24 19.3	17.0	9 675
1990 RN1	1990 09 20.36094	23 38 21.34	-05 24 21.4		9 675
1990 RO1 *	1990 09 14.33073	23 44 58.27	-03 15 28.8	17.2	9 675
1990 RO1	1990 09 14.36858	23 44 56.53	-03 15 43.6		9 675
1990 RO1	1990 09 20.33009	23 40 22.68	-03 56 06.2	17.2	9 675
1990 RO1	1990 09 20.36094	23 40 21.27	-03 56 19.2		9 675
1990 RP1 *	1990 09 14.33073	23 46 18.22	-02 01 43.7	17.5	9 675
1990 RP1	1990 09 14.36858	23 46 16.32	-02 01 51.4		9 675
1990 RP1	1990 09 20.33009	23 39 40.92	-02 22 13.3	17.5	9 675
1990 RP1	1990 09 20.36094	23 39 39.00	-02 22 16.3		9 675
1990 SQ	1990 10 21.09983	21 19 28.34	+00 37 00.5		9 675
1990 SQ	1990 10 21.14184	21 19 26.97	+00 39 10.6		9 675
1990 SQ	1990 10 23.10868	21 18 49.45	+02 20 19.0		9 675
1990 SQ	1990 10 23.15069	21 18 48.49	+02 22 29.0		9 675
1990 SQ	1990 11 18.12153	21 33 57.43	+23 29 17.8		2 675
1990 SQ	1990 11 18.14740	21 33 59.28	+23 30 28.3		2 675
1990 SW3	1990 10 15.30365	02 12 41.41	-06 52 55.2	16.0	2 675
1990 SW3	1990 10 15.32830	02 12 40.09	-06 53 01.5		2 675
1990 SW3	1990 10 17.37899	02 10 53.70	-06 59 27.5		2 675
1990 SW3	1990 10 17.41007	02 10 51.90	-06 59 32.5		2 675
1990 SX3	1990 10 14.24375	00 13 53.79	+25 50 50.2	16.0	2 675
1990 SX3	1990 10 14.26875	00 13 52.37	+25 50 43.7		2 675
1990 SX3	1990 10 17.22257	00 11 24.29	+25 37 13.8		2 675
1990 SX3	1990 10 17.24913	00 11 22.87	+25 37 05.4		2 675
1990 SY3	1990 10 15.23194	00 24 22.05	+24 18 21.6	16.5	2 675
1990 SY3	1990 10 15.26059	00 24 20.73	+24 18 06.6		2 675
1990 SY3	1990 10 19.17500	00 21 36.72	+23 44 31.9		2 675
1990 SZ3	1990 10 15.23194	00 16 46.84	+23 53 29.6	16.5	2 675
1990 SZ3	1990 10 15.26059	00 16 45.28	+23 53 20.6		2 675
1990 SZ3	1990 10 19.17500	00 13 33.54	+23 31 35.4		2 675
1990 SB4	1990 10 15.23194	00 18 35.42	+21 02 51.5	16.0	2 675
1990 SB4	1990 10 15.26059	00 18 33.56	+21 02 47.8		2 675
1990 SB4	1990 10 19.17500	00 14 41.22	+20 52 36.3		2 675
1990 SC4	1990 10 14.17049	23 22 36.60	-00 08 57.2	16.7	2 675
1990 SC4	1990 10 14.19531	23 22 36.02	-00 09 26.7		2 675
1990 SC4	1990 10 17.17135	23 21 29.52	-01 08 23.2		2 675
1990 SC4	1990 10 17.19444	23 21 29.00	-01 08 50.5		2 675
1990 SF4	1990 10 14.16441	23 17 42.13	+09 08 26.9	16.7	2 675
1990 SF4	1990 10 14.18941	23 17 41.51	+09 08 10.5		2 675
1990 SF4	1990 10 17.16563	23 16 44.28	+08 38 17.0		2 675
1990 SF4	1990 10 17.18854	23 16 43.95	+08 38 04.0		2 675
1990 SG4	1990 10 14.16441	23 18 52.51	+07 39 11.6	16.2	2 675
1990 SG4	1990 10 14.18941	23 18 52.01	+07 39 01.1		2 675
1990 SG4	1990 10 17.16563	23 18 12.89	+07 18 38.0		2 675
1990 SG4	1990 10 17.18854	23 18 12.52	+07 18 29.3		2 675
1990 SS4	1990 09 23.16372	22 09 01.49	-17 21 39.2	15.3	2 675
1990 SS4	1990 09 23.19010	22 09 00.70	-17 21 34.8		2 675
1990 SS4	1990 09 25.20573	22 08 17.94	-17 15 33.3		2 675
1990 SS4	1990 09 25.22569	22 08 17.42	-17 15 28.8		2 675
1990 ST4	1990 09 13.31979	22 30 08.56	-06 42 16.4	16.8	9 675
1990 ST4	1990 09 13.35122	22 30 07.52	-06 42 34.8		9 675
1990 ST4	1990 09 18.19097	22 27 57.30	-07 26 04.3	16.8	9 675
1990 ST4	1990 09 18.22222	22 27 56.44	-07 26 21.8		9 675
1990 TF	1990 08 22.40318	23 26 05.68	+00 11 24.9	17.0	9 675

1990 TF	1990 08	22.44363	23 26	03.59	+00 11	34.6		9 675
1990 TZ	1990 11	18.17813	00 16	37.39	+21 28	50.8	15.0	2 675
1990 TZ	1990 11	18.20191	00 16	37.39	+21 28	26.2		2 675
1990 TZ	1990 11	19.11215	00 16	41.36	+21 12	32.6		2 675
1990 TN1	1990 11	18.13455	23 33	21.39	+25 08	35.2	16.5	2 675
1990 TN1	1990 11	18.15885	23 33	21.32	+25 08	25.4		2 675
1990 TN1	1990 11	19.10660	23 33	30.54	+25 02	00.8		2 675
1990 TN1	1990 11	19.12899	23 33	30.63	+25 01	52.0		2 675
1990 TO1	1990 11	18.14080	23 59	56.08	+13 43	12.7	16.7	2 675
1990 TO1	1990 11	18.16528	23 59	57.11	+13 42	45.8		2 675
1990 TO1	1990 11	19.11771	00 00	39.08	+13 25	39.5		2 675
1990 TM3 *	1990 10	14.37431	01 26	20.13	+32 49	46.7	16.5	2 675
1990 TM3	1990 10	14.39740	01 26	17.52	+32 50	07.2		2 675
1990 TM3	1990 10	16.37977	01 22	39.27	+33 19	24.1		2 675
1990 TM3	1990 10	16.41319	01 22	35.44	+33 19	52.1		2 675
1990 TN3 *	1990 10	15.45920	02 29	45.58	+23 37	49.5	16.5	2 675
1990 TN3	1990 10	15.48229	02 29	43.35	+23 38	10.8		2 675
1990 TN3	1990 10	16.44566	02 28	09.73	+23 53	11.1		2 675
1990 TN3	1990 10	16.46597	02 28	07.78	+23 53	27.9		2 675
1990 TN3	1990 11	18.22865	01 30	21.72	+29 30	14.9	16.7	2 675
1990 TN3	1990 11	18.25608	01 30	19.38	+29 30	23.2		2 675
1990 TN3	1990 11	19.16215	01 29	06.92	+29 34	49.1		2 675
1990 TN3	1990 11	19.18976	01 29	04.65	+29 34	58.4		2 675
1990 TL4 *	1990 10	14.30972	00 53	46.42	+20 08	20.2	15.5	2 675
1990 TL4	1990 10	14.33455	00 53	45.09	+20 08	10.4		2 675
1990 TL4	1990 10	16.27865	00 52	09.21	+19 55	21.7		2 675
1990 TL4	1990 10	16.30278	00 52	07.99	+19 55	11.9		2 675
1990 TL4	1990 11	18.18993	00 35	31.82	+16 04	13.8	15.5	2 675
1990 TL4	1990 11	18.21389	00 35	31.65	+16 04	05.9		2 675
1990 TL4	1990 11	19.17587	00 35	26.92	+15 58	28.9		2 675
1990 UQ	1990 10	20.47135	03 47	15.12	+06 09	27.3	17.5	9 675
1990 UQ	1990 10	20.50712	03 47	08.24	+06 09	11.0		9 675
1990 UQ	1990 10	22.43802	03 41	17.41	+05 56	03.7	17.5	9 675
1990 UQ	1990 10	22.49566	03 41	06.58	+05 55	40.6		9 675
1990 UR1 *	1990 10	25.31823	01 22	44.37	+30 57	45.4	15	3 675
1990 UR1	1990 10	25.34965	01 22	43.02	+30 56	49.3		3 675
1990 UR1	1990 10	26.37535	01 22	06.83	+30 25	54.0		3 675
1990 UR1	1990 10	26.41510	01 22	05.27	+30 24	41.7		3 675
1990 UO2 *	1990 10	22.27065	01 34	25.62	+34 21	59.7	15.2	3 675
1990 UO2	1990 10	25.36684	01 32	27.08	+33 09	13.6		3 675
1990 UO2	1990 10	26.37535	01 31	49.87	+32 44	32.7		3 675
1990 UP2 *	1990 10	25.31823	01 17	34.62	+30 19	15.5	18	3 675
1990 UP2	1990 10	25.34966	01 17	33.59	+30 19	10.7		3 675
1990 UP2	1990 10	26.41510	01 16	57.85	+30 15	50.4		3 675
1990 UP2	1990 11	13.20069	01 08	07.44	+29 09	19.2	18.3	3 675
1990 UP2	1990 11	15.15069	01 07	19.31	+29 01	10.7		3 675
1990 UL3	1990 09	17.43524	01 45	00.90	+17 35	32.3	17.6	3 675
1990 UL3	1990 09	17.46944	01 45	01.56	+17 35	33.5		3 675
1990 UL3	1990 09	20.51396	01 45	55.33	+17 35	29.9		3 675
1990 UL3	1990 10	14.40313	01 44	58.37	+16 15	37.0	15.7	2 675
1990 UL3	1990 10	16.35851	01 44	27.86	+16 03	57.2		2 675
1990 UL3 *	1990 10	25.37447	01 41	56.61	+15 05	04.4	17	3 675
1990 UL3	1990 10	25.41319	01 41	55.81	+15 04	47.5		3 675
1990 UL3	1990 11	13.23819	01 39	08.23	+13 04	54.4	17.7	3 675
1990 UL3	1990 11	13.27777	01 39	08.14	+13 04	39.8		3 675
1990 UL3	1990 11	15.24462	01 39	14.02	+12 54	29.4		3 675
1990 UL3	1990 11	15.27447	01 39	14.23	+12 54	18.5		3 675
1990 VB	1990 11	18.12882	23 00	52.60	+20 47	57.5	16.2	2 675
1990 VB	1990 11	18.15330	23 00	59.77	+20 47	39.5		2 675

1990 VX2	1990 11	18.34149	04 10	23.38	+28 25	28.7	14.5	2 675
1990 VX2	1990 11	18.36892	04 10	20.55	+28 26	05.2		2 675
1990 WA	1990 11	13.49895	06 00	11.37	+11 03	46.3		3 675
1990 WA	1990 11	13.53142	06 00	12.45	+11 05	19.9	17	3 675
1990 WA	1990 11	14.49791	06 00	49.82	+11 54	11.0		3 675
1990 WA	1990 11	14.52847	06 00	50.75	+11 55	46.0		3 675
1990 WA *	1990 11	18.45417	06 02	58.46	+15 30	22.4	16.0	2 675
1990 WA	1990 11	18.48056	06 02	59.00	+15 31	55.4		2 675
1990 WA	1990 11	21.32031	06 04	06.46	+18 23	13.4	16.0	2 675
1990 WA	1990 11	21.34306	06 04	06.69	+18 24	42.2		2 675
1990 WK2 *	1990 11	18.22865	01 33	32.18	+30 49	30.5	16.3	2 675
1990 WK2	1990 11	18.25608	01 33	31.17	+30 49	13.5		2 675
1990 WK2	1990 11	19.16215	01 33	02.86	+30 40	01.5		2 675
1990 WK2	1990 11	19.18976	01 33	01.84	+30 39	44.6		2 675
1990 WL2 *	1990 11	18.22865	01 37	33.11	+26 25	11.9	15.5	2 675
1990 WL2	1990 11	18.25608	01 37	32.39	+26 24	57.9		2 675
1990 WL2	1990 11	19.16215	01 37	11.47	+26 17	40.8		2 675
1990 WL2	1990 11	19.18976	01 37	10.69	+26 17	28.0		2 675
1990 WZ2 *	1990 11	18.13455	23 35	34.95	+24 17	14.4	16.0	2 675
1990 WZ2	1990 11	18.15885	23 35	34.89	+24 17	31.8		2 675
1990 WZ2	1990 11	19.10660	23 35	23.83	+24 28	07.6		2 675
1990 WZ2	1990 11	19.12899	23 35	23.46	+24 28	24.5		2 675
2098 P-L *	1960 09	24.45000	00 49	05.61	+07 18	07.6	15.3	4 675
2098 P-L	1960 09	26.37010	00 48	04.15	+06 51	11.9		4 675
2098 P-L	1960 09	28.45140	00 46	54.78	+06 21	37.8		4 675
2098 P-L	1960 09	29.39514	00 46	22.92	+06 08	07.9		4 675
2098 P-L	1960 09	29.44510	00 46	21.07	+06 07	21.3		4 675
2098 P-L	1960 10	17.31529	00 36	34.56	+01 57	06.1		4 675
2098 P-L	1960 10	22.26809	00 34	31.77	+00 56	40.3		4 675
2098 P-L	1960 10	25.30351	00 33	31.82	+00 22	53.8		4 675
2098 P-L	1960 10	26.35766	00 33	13.89	+00 11	47.9		4 675
2164 P-L *	1960 09	26.37010	01 00	49.87	+11 04	50.5	17.4	4 675
2164 P-L	1960 09	28.45140	00 59	04.94	+10 55	43.7		4 675
2164 P-L	1960 09	29.44510	00 58	13.99	+10 51	08.6		4 675
2164 P-L	1960 10	25.37570	00 37	02.50	+08 30	07.9		4 675
2164 P-L	1960 10	26.36840	00 36	26.68	+08 25	08.4		4 675
3016 P-L	1990 10	21.09983	21 26	11.38	-00 48	26.5	18.5	9 675
3016 P-L	1990 10	21.14184	21 26	12.57	-00 48	36.0		9 675
3535 P-L	1960 09	26.24514	00 32	17.22	+14 35	24.1	17.6	4 675
3535 P-L	1960 09	28.46181	00 29	52.43	+14 30	57.9		4 675
3535 P-L	1960 09	29.47153	00 28	46.45	+14 28	40.1		4 675
3535 P-L *	1960 10	17.17917	00 10	40.07	+13 31	00.0	17.7	4 675
3535 P-L	1960 10	17.33750	00 10	31.17	+13 30	25.0		4 675
3535 P-L	1960 10	22.12083	00 06	28.27	+13 11	53.2		4 675
3535 P-L	1960 10	24.21256	00 04	51.68	+13 03	51.3		4 675
3535 P-L	1960 10	24.30972	00 04	47.08	+13 03	27.7		4 675
3535 P-L	1960 10	26.28264	00 03	22.35	+12 55	59.2		4 675
4004 P-L *	1960 09	24.33613	00 15	11.11	+05 07	49.3	18.7	4 675
4004 P-L	1960 09	24.37573	00 15	08.94	+05 07	40.7		4 675
4004 P-L	1960 09	25.32502	00 14	17.71	+05 04	14.4		4 675
4004 P-L	1960 09	25.42780	00 14	11.96	+05 03	50.1		4 675
4004 P-L	1960 09	26.27573	00 13	26.30	+05 00	43.6		4 675
4004 P-L	1960 09	26.30558	00 13	24.69	+05 00	36.9		4 675
4004 P-L	1960 09	28.32780	00 11	35.29	+04 53	02.6		4 675
4004 P-L	1960 09	28.36808	00 11	33.15	+04 52	53.8		4 675
4004 P-L	1960 10	17.27085	23 56	04.86	+03 42	54.3		4 675
4004 P-L	1960 10	22.22293	23 52	57.18	+03 27	38.4		4 675
4004 P-L	1960 10	24.35836	23 51	46.00	+03 21	48.1		4 675
4004 P-L	1960 10	26.32573	23 50	46.32	+03 16	52.0		4 675

4066	P-L	*	1960	09	24.37573	00	28	46.56	+04	03	02.4	18.4	4	675
4066	P-L		1960	09	24.41183	00	28	44.38	+04	02	58.8		4	675
4066	P-L		1960	09	25.42780	00	27	44.14	+04	00	49.4		4	675
4066	P-L		1960	09	26.30558	00	26	52.08	+03	58	54.1		4	675
4066	P-L		1960	09	26.31530	00	26	51.48	+03	58	52.2		4	675
4066	P-L		1960	09	27.40836	00	25	45.25	+03	56	28.1		4	675
4066	P-L		1960	09	28.36808	00	24	47.26	+03	54	14.7		4	675
4066	P-L		1960	09	28.39725	00	24	45.45	+03	54	11.4		4	675
4066	P-L		1960	10	17.27085	00	06	49.36	+03	12	22.6		4	675
4066	P-L		1960	10	22.22293	00	03	15.87	+03	05	46.2		4	675
4066	P-L		1960	10	24.35836	00	01	57.65	+03	03	55.1		4	675
4066	P-L		1960	10	26.32573	00	00	54.19	+03	02	52.6		4	675
4550	P-L	*	1960	09	24.41183	00	35	32.90	+02	44	49.5	18.9	4	675
4550	P-L		1960	09	26.31530	00	33	38.88	+02	38	43.4		4	675
4550	P-L		1960	09	27.40836	00	32	31.96	+02	35	08.8		4	675
4550	P-L		1960	09	28.39725	00	31	31.14	+02	31	52.4		4	675
4550	P-L		1960	10	17.27085	00	12	45.73	+01	34	54.7		4	675
4550	P-L		1960	10	22.22293	00	08	47.22	+01	25	25.1		4	675
4550	P-L		1960	10	26.32573	00	06	01.00	+01	20	26.7		4	675
4611	P-L	*	1960	09	24.41183	00	20	33.44	-00	02	55.5	18.6	4	675
4611	P-L		1960	09	26.31530	00	18	30.81	-00	06	23.3		4	675
4611	P-L		1960	09	27.40836	00	17	19.82	-00	08	21.1		4	675
4611	P-L		1960	09	28.39725	00	16	15.75	-00	10	07.4		4	675
4611	P-L		1960	10	17.28198	23	57	07.83	-00	34	16.6		4	675
4611	P-L		1960	10	22.23406	23	53	01.38	-00	35	39.3		4	675
4611	P-L		1960	10	25.25350	23	50	47.83	-00	35	04.0		4	675
4611	P-L		1960	10	26.26113	23	50	06.34	-00	34	34.8		4	675
4611	P-L		1960	10	26.31531	23	50	04.00	-00	34	35.1		4	675
4874	P-L	*	1960	09	26.31530	00	35	36.41	-00	53	38.4	18.5	4	675
4874	P-L		1960	09	27.40836	00	34	39.74	-00	58	32.7		4	675
4874	P-L		1960	09	28.39725	00	33	48.40	-01	02	58.5		4	675
4874	P-L		1960	10	17.31529	00	18	02.77	-02	13	47.3		4	675
4874	P-L		1960	10	25.25350	00	12	50.61	-02	30	05.4		4	675
4874	P-L		1960	10	26.31531	00	12	15.02	-02	31	28.1		4	675
6607	P-L	*	1960	09	24.35002	00	08	52.97	-03	51	14.0	18.6	4	675
6607	P-L		1960	09	26.28543	00	07	10.27	-04	03	57.2		4	675
6607	P-L		1960	09	27.34237	00	06	14.29	-04	10	47.4		4	675
6607	P-L		1960	09	28.33822	00	05	21.67	-04	17	10.3		4	675
6607	P-L		1960	10	17.28198	23	50	32.72	-05	56	32.9		4	675
6607	P-L		1960	10	22.16324	23	47	40.10	-06	13	23.3		4	675
6607	P-L		1960	10	24.23753	23	46	36.06	-06	19	15.3		4	675
6607	P-L		1960	10	26.27157	23	45	38.95	-06	24	15.3		4	675
6792	P-L	*	1960	09	24.35002	00	07	21.21	-04	40	44.1	18.3	4	675
6792	P-L		1960	09	26.28543	00	05	51.16	-04	50	40.5		4	675
6792	P-L		1960	09	27.34237	00	05	02.05	-04	55	59.9		4	675
6792	P-L		1960	09	28.33822	00	04	16.03	-05	00	55.6		4	675
6792	P-L		1960	10	17.28198	23	51	20.76	-06	14	18.8		4	675
6792	P-L		1960	10	26.27157	23	47	10.00	-06	31	18.0		4	675
7622	P-L	*	1960	10	22.23406	00	10	49.01	-05	53	22.8	17.1	4	675
7622	P-L		1960	10	25.25350	00	09	08.02	-05	38	40.9		4	675
7622	P-L		1960	10	26.31531	00	08	36.87	-05	33	02.3		4	675
1335	T-2		1973	09	19.19948	00	26	01.64	+02	41	41.5		4	675
1335	T-2		1973	09	19.25006	00	25	59.53	+02	41	28.0		4	675
1335	T-2		1973	09	24.36181	00	22	19.16	+02	16	46.0		4	675
1335	T-2		1973	09	24.42847	00	22	16.12	+02	16	27.1		4	675
1335	T-2		1973	09	25.25642	00	21	40.06	+02	12	19.6		4	675
1335	T-2		1973	09	25.32031	00	21	37.15	+02	12	01.5		4	675
1335	T-2	*	1973	09	29.25330	00	18	42.43	+01	52	26.4	18.9	4	675
1335	T-2		1973	09	29.29219	00	18	40.72	+01	52	13.1		4	675

1335	T-2	1973	09	29.31806	00	18	39.42	+01	52	06.5	4	675	
1335	T-2	1973	09	29.35694	00	18	37.67	+01	51	53.7	4	675	
1335	T-2	1973	09	30.21007	00	17	59.73	+01	47	41.3	4	675	
1335	T-2	1973	09	30.24826	00	17	58.19	+01	47	30.1	4	675	
1335	T-2	1973	09	30.27431	00	17	56.77	+01	47	21.4	4	675	
1335	T-2	1973	09	30.31476	00	17	55.14	+01	47	10.7	4	675	
1335	T-2	1973	10	04.28958	00	14	58.68	+01	27	19.8	4	675	
1335	T-2	1973	10	04.32708	00	14	56.97	+01	27	12.4	4	675	
1335	T-2	1973	10	04.35208	00	14	55.90	+01	27	01.8	4	675	
1335	T-2	1973	10	04.38889	00	14	54.10	+01	26	53.0	4	675	
1335	T-2	1973	10	05.31684	00	14	13.55	+01	22	15.2	4	675	
1335	T-2	1973	10	05.37917	00	14	10.73	+01	21	58.5	4	675	
3099	T-2	1990	09	14.33073	23	14	28.75	-05	00	27.3	17.5	9 675	
3099	T-2	1990	09	14.36858	23	14	27.13	-05	00	42.2	9	675	
3290	T-2	1973	09	19.22500	00	27	13.47	-01	46	17.1	4	675	
3290	T-2	1973	09	19.27865	00	27	11.13	-01	46	28.9	4	675	
3290	T-2	1973	09	20.30278	00	26	25.94	-01	50	06.7	4	675	
3290	T-2	1973	09	24.38750	00	23	22.39	-02	04	26.5	4	675	
3290	T-2	1973	09	24.45434	00	23	19.34	-02	04	40.5	4	675	
3290	T-2	1973	09	25.28125	00	22	41.91	-02	07	32.4	4	675	
3290	T-2	1973	09	25.34601	00	22	38.77	-02	07	46.4	4	675	
3290	T-2	1973	09	29.27986	00	19	38.85	-02	21	14.7	4	675	
3290	T-2	1973	09	29.29219	00	19	38.19	-02	21	17.2	4	675	
3290	T-2	1973	09	29.34375	00	19	35.85	-02	21	27.6	4	675	
3290	T-2	1973	09	29.35694	00	19	35.18	-02	21	29.1	4	675	
3290	T-2	1973	09	30.23524	00	18	55.18	-02	24	29.8	4	675	
3290	T-2	1973	09	30.24826	00	18	54.44	-02	24	28.0	4	675	
3290	T-2	*	1973	09	30.30174	00	18	52.09	-02	24	42.0	18.3	4 675
3290	T-2		1973	09	30.31476	00	18	51.34	-02	24	41.9	4	675
3290	T-2		1973	10	04.31493	00	15	49.46	-02	37	31.7	4	675
3290	T-2		1973	10	04.32708	00	15	48.92	-02	37	33.0	4	675
3290	T-2		1973	10	04.37674	00	15	46.59	-02	37	44.6	4	675
3290	T-2		1973	10	04.38889	00	15	46.05	-02	37	45.6	4	675
3290	T-2		1973	10	05.34167	00	15	03.52	-02	40	42.6	4	675
3290	T-2		1973	10	05.35382	00	15	02.72	-02	40	44.4	4	675
3290	T-2		1973	10	05.40347	00	15	00.65	-02	40	54.7	4	675
3290	T-2		1973	10	05.41597	00	14	59.90	-02	40	55.7	4	675
2546	T-3	*	1977	10	17.26458	01	17	38.27	+10	12	19.0	15.4	4 675
2546	T-3		1977	10	17.33177	01	17	33.38	+10	12	45.3	4	675
2546	T-3		1977	10	21.40868	01	12	54.51	+10	38	28.2	4	675
2546	T-3		1977	10	21.46910	01	12	50.29	+10	38	49.6	4	675
2546	T-3		1977	10	22.41528	01	11	47.59	+10	44	42.1	4	675
2546	T-3		1977	10	22.46962	01	11	43.92	+10	45	02.1	4	675
4086	T-3		1977	10	07.28125	01	24	37.71	+00	39	32.9	4	675
4086	T-3		1977	10	11.30000	01	20	41.01	+00	15	49.1	4	675
4086	T-3		1977	10	11.36771	01	20	36.79	+00	15	26.1	4	675
4086	T-3		1977	10	12.29826	01	19	41.91	+00	10	15.4	4	675
4086	T-3		1977	10	12.36441	01	19	37.82	+00	09	52.9	4	675
4086	T-3	*	1977	10	16.28368	01	15	47.87	-00	10	32.6	18.9	4 675
4086	T-3		1977	10	16.34931	01	15	43.93	-00	10	52.0	4	675
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4086	T-3		1977	10	17.35313	01	14	45.97	-00	15	42.9	4	675
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4		1990	10	22.49566	03	52	32.30	+10	45	13.8	9	675	
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125	1990 09	18.19097	22 42	28.64	-07 39	22.8	9 675
125	1990 09	18.22222	22 42	27.28	-07 39	34.0	9 675
243	1990 09	13.31979	22 47	52.53	-07 00	08.0	9 675
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388	1990 09	20.33009	23 44	01.91	-01 23	05.4	9 675
388	1990 09	20.36094	23 44	00.39	-01 23	11.1	9 675
435	1990 09	14.33073	23 34	23.24	-04 45	46.8	9 675
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551	1990 09	13.31979	22 41	51.41	-08 30	59.2	9 675
551	1990 09	13.35122	22 41	49.95	-08 31	07.6	9 675
551	1990 09	18.19097	22 38	16.06	-08 51	44.1	9 675
551	1990 09	18.22222	22 38	14.65	-08 51	51.7	9 675
560	1990 10	20.47135	04 00	50.65	+09 14	29.3	9 675
560	1990 10	20.50712	04 00	49.64	+09 14	23.3	9 675
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689	1990 09	18.19097	22 45	58.95	-07 54	51.2	9 675
689	1990 09	18.22222	22 45	57.86	-07 55	09.8	9 675
702	1990 10	23.10868	20 59	08.80	+01 28	30.8	9 675
702	1990 10	23.15069	20 59	09.64	+01 28	28.7	9 675
732	1990 09	13.31979	22 45	09.02	-04 59	30.7	9 675
732	1990 09	13.35122	22 45	07.54	-04 59	49.7	9 675
732	1990 09	18.19097	22 41	34.24	-05 47	41.1	9 675
732	1990 09	18.22222	22 41	32.87	-05 47	59.6	9 675
771	1990 10	23.10868	20 59	56.44	-00 37	56.6	16.5 9 675
771	1990 10	23.15069	20 59	57.73	-00 38	11.1	9 675
799	1990 10	20.47135	03 41	53.73	+12 13	45.0	9 675
799	1990 10	20.50712	03 41	52.40	+12 13	34.5	9 675
799	1990 10	22.43802	03 40	42.04	+12 04	05.7	9 675
799	1990 10	22.49566	03 40	39.70	+12 03	49.3	9 675
886	1990 10	20.47135	03 43	11.22	+12 16	16.6	9 675
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886	1990 10	22.49566	03 41	40.89	+12 22	49.6	9 675
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962	1990 09	14.33073	23 46	48.33	-03 36	55.4	9 675
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962	1990 09	20.36094	23 42	14.92	-04 12	35.3	9 675
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1003	1990 09	20.36094	23 17	54.94	-06 02	51.2	9 675
1085	1990 10	20.47135	03 46	23.48	+10 36	03.2	9 675
1085	1990 10	20.50712	03 46	22.29	+10 35	55.4	9 675

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1688	1990 10	21.09983	21 17	46.86	+01 02	32.1	9 675
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1764	1990 09	13.31979	22 43	11.30	-08 45	39.6	9 675
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1764	1990 09	18.19097	22 39	52.16	-09 08	11.5	9 675
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2636	1990 10 20.50712	04 08 42.93	+10 20 16.8	9 675
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3005	1990 09 13.35122	22 30 11.42	-08 14 31.6	9 675
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3047	1990 09 14.33073	23 20 29.94	-02 42 06.5	17.2 9 675
3047	1990 09 14.36858	23 20 27.87	-02 42 17.8	9 675
3047	1990 09 20.33009	23 15 25.57	-03 11 16.2	9 675
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3460	1990 09 20.33009	23 33 29.88	-07 08 34.0	9 675
3460	1990 09 20.36094	23 33 28.49	-07 08 42.7	9 675
3479	1990 10 21.09983	21 33 55.87	-05 03 25.3	9 675
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3538	1990 09 20.36094	23 23 10.79	-04 20 25.5	9 675

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3617	1990 10	20.50712	03 52	24.80	+04 45	33.6	9 675
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3870	1990 10	20.47135	03 52	47.95	+12 02	58.4	9 675
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4036	1990 10	22.49566	03 49	51.10	+13 18	32.7	9 675
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4110	1990 09	20.36094	23 40	27.61	-01 02	07.3	9 675
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4172	1990 09	14.33073	23 32	48.43	-01 33	43.5	9 675
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4619	1990 09	20.33009	23 31	52.03	+00 04	56.1	9 675
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4623	1990 09	18.19097	22 49	34.26	-08 24	24.1	9 675
4623	1990 09	18.22222	22 49	32.80	-08 24	31.7	9 675
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4642	1990 09	18.19097	22 39	43.62	-08 52	41.2	9 675
4642	1990 09	18.22222	22 39	42.35	-08 52	48.9	9 675

18.0

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

Observers B. A. Skiff, T. A. Polakis

Measurer B. A. Skiff

1.8-m reflector + CCD

1982 DB	1990 11 16.14757	22 14 49.10	-08 15 27.0	688
1982 DB	1990 11 16.15868	22 14 49.71	-08 15 23.8	688
1982 DB	1990 11 16.17326	22 14 50.55	-08 15 19.2	688

690 Lowell Observatory

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

Observers J. C. Duncan, R. L. Millis

Measurers B. A. Skiff, E. Bowell, L. H. Wasserman

0.125-m f/6.3 Voigtlander lens, 0.46-m astrographic reflector

30	1905 11 30.16250	22 01 08.73	-10 25 25.1	p 690
36	1905 10 25.14792	21 52 55.94	-17 36 41.7	690
90	1905 10 25.25694	23 12 16.01	-08 21 14.1	690
97	1905 11 30.16250	21 52 11.87	-14 43 09.4	O 690
98	1905 10 26.25972	22 40 00.54	-09 07 26.9	690
113	1905 10 25.14792	22 03 40.89	-16 45 24.2	p 690
138	1905 11 30.16250	22 02 06.85	-15 07 34.9	R 690
160	1905 11 30.22396	22 28 46.95	-10 30 51.4	R 690
195	1905 10 26.15208	22 25 45.25	-12 49 22.8	690
216	1990 11 06.45278	07 49 05.61	+06 51 38.8	690
216	1990 11 06.45382	07 49 05.61	+06 51 37.7	690
216	1990 11 06.45521	07 49 05.64	+06 51 36.9	690
216	1990 11 09.47326	07 50 34.60	+06 23 26.9	690
216	1990 11 09.47604	07 50 34.66	+06 23 25.4	690
216	1990 11 09.47847	07 50 34.70	+06 23 24.2	690
216	1990 11 10.47361	07 51 00.71	+06 14 11.4	690
216	1990 11 10.47847	07 51 00.84	+06 14 08.6	690
216	1990 11 10.48368	07 51 00.94	+06 14 06.1	690
216	1990 11 10.49635	07 51 01.25	+06 13 58.8	690
216	1990 11 10.50214	07 51 01.39	+06 13 55.5	690
216	1990 11 10.50666	07 51 01.50	+06 13 53.0	690
216	1990 11 11.49444	07 51 25.58	+06 04 47.1	690
216	1990 11 11.49867	07 51 25.68	+06 04 44.7	690
216	1990 11 11.50312	07 51 25.76	+06 04 42.2	690
216	1990 11 13.47708	07 52 08.83	+05 46 40.0	690
216	1990 11 13.48131	07 52 08.92	+05 46 37.6	690
216	1990 11 13.48611	07 52 09.02	+05 46 35.0	690
216	1990 11 14.48333	07 52 28.16	+05 37 33.0	690
216	1990 11 14.49167	07 52 28.29	+05 37 28.5	690
216	1990 11 14.49595	07 52 28.36	+05 37 26.3	690
216	1990 11 15.47917	07 52 45.53	+05 28 35.6	690
216	1990 11 15.48333	07 52 45.58	+05 28 33.3	690
216	1990 11 16.47500	07 53 01.15	+05 19 41.9	690
216	1990 11 16.47917	07 53 01.21	+05 19 39.7	690
216	1990 11 16.48333	07 53 01.27	+05 19 37.5	690
216	1990 11 16.49583	07 53 01.42	+05 19 30.7	690
216	1990 11 16.49931	07 53 01.47	+05 19 28.9	690
216	1990 11 16.50278	07 53 01.53	+05 19 27.0	690
358	1905 11 30.16250	22 02 31.25	-11 45 27.2	R 690
1336	1905 10 26.15208	22 40 38.74	-12 51 56.9	690
1379	1905 10 26.15208	22 28 58.04	-10 37 27.8	690

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

See also MPC 9198, MPC 10373 and Astron. J. 91, 1242, 1986

1989 TO11	1990 11	13.17763	02 54	15.13	+08 32	59.7	18.1V	691
1989 TO11	1990 11	13.19816	02 54	14.51	+08 32	55.7		691
1989 TO11	1990 11	13.21897	02 54	13.88	+08 32	51.6		691
1990 TF1	1990 10	23.30325	01 05	32.88	+00 56	33.9		691
1990 TF1	1990 10	23.33291	01 05	32.53	+00 55	50.1	19.0V	691
1990 TF1	1990 10	23.36007	01 05	32.01	+00 54	45.9		691
1990 TG1	1990 10	26.23124	01 05	46.32	+07 26	43.7	19.6V	691
1990 TG1	1990 10	26.24854	01 05	45.27	+07 26	35.5		691
1990 TG1	1990 10	26.26519	01 05	44.24	+07 26	27.1		691
1990 TG1	1990 10	28.29558	01 03	45.65	+07 10	18.9	19.5V	691
1990 TG1	1990 10	28.30589	01 03	45.02	+07 10	13.9		691
1990 TG1	1990 10	28.31829	01 03	44.30	+07 10	08.2		691
1990 TH1	1990 10	24.27603	01 41	08.27	+04 55	54.6	18.2V	691
1990 TH1	1990 10	24.28267	01 41	07.89	+04 55	35.6		691
1990 TH1	1990 10	24.29469	01 41	07.29	+04 55	04.7		691
1990 UN	1990 10	26.20565	00 20	25.33	+20 28	21.9	19.3V	691
1990 UN	1990 10	26.22206	00 20	17.53	+20 29	28.1		691
1990 UN	1990 10	28.33565	00 01	56.61	+23 12	35.2	19.3V	691
1990 UN	1990 10	28.35567	00 01	43.82	+23 14	16.6		691
1990 UN	1990 11	06.12521	20 14	47.84	+39 12	21.6	19.1V	691
1990 UN	1990 11	06.13691	20 14	13.37	+39 12	22.8		691
1990 UN	1990 11	06.14737	20 13	42.35	+39 12	24.7		691
1990 UN	1990 11	06.15580	20 13	17.52	+39 12	25.3		691
1990 UO	1990 10	26.28089	01 07	12.39	+04 39	46.0	20.6V	691
1990 UO	1990 10	26.28565	01 07	11.38	+04 39	32.5		691
1990 UO	1990 10	26.29660	01 07	09.01	+04 39	01.2		691
1990 UO	1990 10	28.36622	00 59	49.87	+03 00	20.2	20.9V	691
1990 UO	1990 10	28.37213	00 59	48.56	+03 00	02.8		691
1990 UO	1990 10	28.38333	00 59	46.08	+02 59	30.8		691
1990 UP *	1990 10	24.44486	02 31	07.11	+12 16	09.3	18.1V	691
1990 UP	1990 10	24.46546	02 30	59.16	+12 18	17.3		691
1990 UP	1990 10	24.48610	02 30	51.61	+12 20	20.4	18.3V	691
1990 UP	1990 10	25.21731	02 26	26.51	+13 34	42.3		691
1990 UP	1990 10	25.23404	02 26	20.14	+13 36	23.3	18.5V	691
1990 UP	1990 10	25.25266	02 26	13.07	+13 38	16.4		691
1990 UP	1990 10	25.49572	02 24	40.57	+14 02	37.4	18.6V	691
1990 UP	1990 10	25.50044	02 24	38.80	+14 03	05.0		691
1990 UP	1990 10	25.51142	02 24	34.68	+14 04	11.3		691
1990 UP	1990 10	26.31243	02 19	42.78	+15 23	41.8		691
1990 UP	1990 10	26.31719	02 19	40.94	+15 24	09.8	18.9V	691
1990 UP	1990 10	26.32850	02 19	36.64	+15 25	16.4		691
1990 UP	1990 10	28.42501	02 06	50.51	+18 44	03.1	18.2V	691
1990 UP	1990 10	28.43069	02 06	48.44	+18 44	34.5		691
1990 UP	1990 10	28.44265	02 06	43.99	+18 45	39.3		691
1990 UT2 *	1990 10	18.09838	23 29	59.82	+10 17	52.3		691
1990 UT2	1990 10	18.12153	23 29	59.52	+10 17	44.0		691
1990 UT2	1990 10	18.14469	23 29	59.24	+10 17	35.0	19.4V	691
1990 UT2	1990 10	22.09824	23 29	45.28	+09 53	00.1		691
1990 UT2	1990 10	22.12073	23 29	45.21	+09 52	52.0	19.6V	691
1990 UT2	1990 10	22.14389	23 29	45.16	+09 52	43.6		691
1990 UT2	1990 10	24.09168	23 29	52.02	+09 41	18.6		691
1990 UT2	1990 10	24.11439	23 29	52.08	+09 41	11.1		691
1990 UT2	1990 10	24.13686	23 29	52.14	+09 41	03.7	19.6V	691
1990 UU2 *	1990 10	24.38380	02 01	32.70	+15 00	43.3	19.7V	691
1990 UU2	1990 10	24.40545	02 01	31.26	+15 00	34.7		691
1990 UU2	1990 10	24.42637	02 01	29.85	+15 00	26.1		691

1990 UU2	1990 10	25.46748	02 00	23.21	+14 53	15.2		691
1990 UU2	1990 10	25.47426	02 00	22.77	+14 53	12.5	19.4V	691
1990 UU2	1990 10	25.48538	02 00	22.04	+14 53	07.7		691
1990 UU2	1990 10	26.33889	01 59	28.02	+14 47	15.1		691
1990 UU2	1990 10	26.36186	01 59	26.51	+14 47	06.1		691
1990 UU2	1990 10	26.38656	01 59	24.88	+14 46	55.3	19.6V	691
1990 UU2	1990 10	28.39059	01 57	18.15	+14 32	59.3	20.1V	691
1990 UU2	1990 10	28.40131	01 57	17.47	+14 32	54.4		691
1990 VA	1990 11	09.17583	02 35	01.74	+03 05	03.6	17.9V	691
1990 VA *	1990 11	09.19634	02 34	58.03	+03 03	54.9		691
1990 VA	1990 11	09.21789	02 34	54.07	+03 02	42.7		691
1990 VA	1990 11	10.19512	02 32	10.65	+02 09	20.7	18.0V	691
1990 VA	1990 11	10.20023	02 32	09.78	+02 09	04.3		691
1990 VA	1990 11	10.21293	02 32	07.51	+02 08	23.6		691
1990 VA	1990 11	10.41927	02 31	31.25	+01 57	23.2		691
1990 VA	1990 11	10.42616	02 31	30.08	+01 57	01.9		691
1990 VA	1990 11	10.43872	02 31	27.94	+01 56	21.7		691
1990 VA	1990 11	11.27920	02 29	15.55	+01 12	46.4	18.0V	691
1990 VA	1990 11	11.29844	02 29	12.28	+01 11	47.9		691
1990 VA	1990 11	13.23344	02 24	22.29	-00 22	13.5	18.1V	691
1990 VA	1990 11	13.23872	02 24	21.47	-00 22	28.1		691
1990 VA	1990 11	13.25295	02 24	19.24	-00 23	07.9		691

696 F. L. Whipple Observatory, Mount Hopkins

R. E. Schild, Harvard-Smithsonian Center for Astrophysics, 60 Garden St.,
Cambridge, MA 02138, U.S.A.

0.61-m reflector + CCD

1988 WN *	1988 11	16.11450	22 37	53.1	+03 06	59	17 V	696
1988 WN	1988 11	16.16029	22 37	55.9	+03 07	08		696

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, J. M. Zajac

1.5-m reflector + CCD

1927 TC	1990 10	16.06729	23 21	37.62	+16 42	45.1		801
1927 TC	1990 10	16.08519	23 21	38.08	+16 42	55.8		801
1927 TC	1990 10	17.04683	23 22	10.77	+16 52	06.1		801
1927 TC	1990 10	17.06512	23 22	11.30	+16 52	16.6		801
1931 UE	1990 10	16.00588	22 18	14.84	-01 10	54.8		801
1931 UE	1990 10	16.04966	22 18	14.04	-01 10	57.0		801
1931 UE	1990 10	17.01507	22 17	59.11	-01 11	41.7		801
1931 UE	1990 10	17.08035	22 17	58.04	-01 11	44.4		801
1936 YD	1990 10	21.23705	01 59	27.04	-10 43	20.9		801
1936 YD	1990 10	21.25470	01 59	25.98	-10 43	21.4		801
1937 QC	1990 10	17.31808	03 36	10.73	+28 08	22.7		801
1937 QC	1990 10	17.36420	03 36	09.57	+28 08	25.9		801
1937 QC	1990 10	22.35447	03 33	49.21	+28 12	10.5		801
1937 QC	1990 10	22.38644	03 33	48.06	+28 12	11.0		801
1955 EH	1990 10	17.18000	00 55	14.28	-04 09	09.2		801
1955 EH	1990 10	17.21292	00 55	12.58	-04 09	24.1		801
1966 CF	1990 10	20.34980	04 33	34.60	+09 40	32.7		801
1966 CF	1990 10	20.39491	04 33	33.71	+09 40	24.7		801
1969 TL1	1990 08	16.27036	22 29	22.28	-14 13	02.1		801
1969 TL1	1990 10	17.00189	21 58	41.21	-16 22	59.0		801
1969 TL1	1990 10	17.07164	21 58	41.51	-16 22	51.3		801
1969 TL1	1990 10	17.99253	21 58	47.35	-16 21	08.0		801
1969 TL1	1990 10	18.05214	21 58	47.73	-16 21	01.7		801
1969 TC2	1990 10	15.24117	02 07	34.29	+09 50	48.4		801

1969 TC2	1990 10 15.26146	02 07 33.17	+09 50 48.0	801
1969 TC2	1990 10 17.25604	02 05 45.59	+09 49 58.0	801
1969 TC2	1990 10 17.27670	02 05 44.43	+09 49 57.5	801
1971 TF	1990 10 17.18462	00 55 48.72	+08 18 44.1	801
1971 TF	1990 10 17.21684	00 55 46.95	+08 18 36.1	801
1971 TF	1990 10 20.10682	00 53 19.53	+08 06 53.4	801
1971 TF	1990 10 20.14719	00 53 17.40	+08 06 43.7	801
1971 TF	1990 10 21.09137	00 52 30.83	+08 02 57.9	801
1971 TF	1990 10 21.11389	00 52 29.66	+08 02 52.6	801
1972 GL	1990 10 21.22447	01 45 37.16	+05 52 51.5	801
1972 GL	1990 10 21.24270	01 45 35.91	+05 52 48.4	801
1972 HR	1990 10 21.22759	01 57 52.08	+06 53 52.6	801
1972 HR	1990 10 21.24556	01 57 51.17	+06 53 49.4	801
1973 SO3	1990 10 16.24385	01 46 13.75	+13 54 03.0	801
1973 SO3	1990 10 16.26277	01 46 12.43	+13 53 59.1	801
1973 SO4	1990 09 21.23498	00 06 48.52	+06 14 43.3	801
1973 SO4	1990 09 21.24862	00 06 47.70	+06 14 41.0	t 801
1973 SO4	1990 10 15.08459	23 45 17.30	+04 47 02.3	801
1973 SO4	1990 10 15.09453	23 45 16.85	+04 47 00.1	801
1973 SO4	1990 10 16.13697	23 44 33.76	+04 43 15.2	801
1973 SO4	1990 10 16.16437	23 44 32.55	+04 43 09.1	801
1973 TP	1990 10 17.26047	02 10 44.39	+11 40 59.6	801
1973 TP	1990 10 17.27903	02 10 43.52	+11 40 45.6	801
1976 YF5	1990 10 21.27395	02 20 41.62	+17 23 26.7	801
1976 YF5	1990 10 21.29118	02 20 40.57	+17 23 22.7	801
1977 DL3	1990 10 20.10271	00 48 07.26	+07 57 15.1	801
1977 DL3	1990 10 20.12144	00 48 06.10	+07 57 11.9	801
1977 DL3	1990 10 21.08763	00 47 09.85	+07 54 28.7	801
1977 DL3	1990 10 21.11148	00 47 08.41	+07 54 24.6	801
1977 QF1	1990 09 22.12108	23 22 08.13	-04 53 02.1	I 801
1977 QD3	1990 10 16.05809	23 19 49.49	-05 34 03.0	801
1977 QD3	1990 10 16.08270	23 19 48.70	-05 33 55.9	801
1977 QD3	1990 10 17.04285	23 19 23.22	-05 29 22.6	801
1977 QD3	1990 10 17.08436	23 19 22.07	-05 29 09.8	801
1977 RJ6	1989 03 11.14747	10 07 18.10	+18 54 54.1	801
1977 RJ6	1990 10 15.14336	00 06 11.05	-01 53 24.7	801
1977 RJ6	1990 10 15.16247	00 06 10.00	-01 53 26.8	801
1977 RJ6	1990 10 20.00074	00 02 16.70	-02 00 19.8	801
1977 RJ6	1990 10 20.02741	00 02 15.46	-02 00 21.4	801
1977 RJ6	1990 10 21.01977	00 01 32.26	-02 01 18.3	801
1977 RJ6	1990 10 21.04337	00 01 31.19	-02 01 19.5	801
1977 TQ6	1990 10 20.07075	00 19 45.14	-14 36 24.6	801
1977 TQ6	1990 10 20.08998	00 19 44.19	-14 36 18.1	801
1977 TQ6	1990 10 21.07573	00 19 00.04	-14 30 24.2	801
1977 TQ6	1990 10 21.09755	00 18 59.03	-14 30 16.2	801
1978 GJ	1990 10 15.11400	23 58 20.19	+04 42 07.6	801
1978 GJ	1990 10 15.13209	23 58 19.44	+04 41 59.3	801
1978 GJ	1990 10 16.18199	23 57 37.72	+04 34 02.9	801
1978 GJ	1990 10 16.19922	23 57 37.01	+04 33 55.0	801
1979 OB9	1990 10 18.12991	00 38 00.99	+06 51 43.5	801
1979 OB9	1990 10 18.14418	00 38 00.35	+06 51 35.6	801
1979 OB9	1990 10 20.07800	00 36 44.70	+06 33 46.9	801
1979 OB9	1990 10 20.09372	00 36 44.07	+06 33 38.4	801
1979 OB9	1990 10 21.08447	00 36 06.93	+06 24 40.3	801
1979 OB9	1990 10 21.10838	00 36 05.98	+06 24 27.5	801
1979 SX2	1990 10 15.22733	01 54 02.14	+16 18 24.0	801
1979 SX2	1990 10 15.25102	01 54 00.84	+16 18 13.7	801
1979 SX2	1990 10 16.24866	01 53 08.67	+16 10 52.2	801
1979 SX2	1990 10 16.26947	01 53 07.52	+16 10 42.8	801

1979	SU9	1990	10	20.21928	01	08	16.77	+07	27	05.8	801
1979	SU9	1990	10	20.24528	01	08	15.55	+07	26	58.7	801
1979	SU9	1990	10	21.16822	01	07	34.33	+07	22	52.1	801
1979	SU9	1990	10	21.19556	01	07	33.07	+07	22	44.9	801
1979	SJ11	1990	10	16.24006	01	46	14.24	+16	30	28.1	801
1979	SJ11	1990	10	16.26622	01	46	12.98	+16	30	21.0	801
1979	SO11	1990	10	15.15079	00	15	52.60	+00	29	20.1	801
1979	SO11	1990	10	15.16836	00	15	51.92	+00	29	15.7	801
1979	SO11	1990	10	20.00566	00	13	04.50	+00	10	06.6	801
1979	SO11	1990	10	20.04050	00	13	03.33	+00	09	59.0	801
1979	SO11	1990	10	21.00894	00	12	32.75	+00	06	30.8	801
1979	SO11	1990	10	21.03356	00	12	31.95	+00	06	25.5	801
1979	WX3	1990	10	16.05351	23	16	17.68	-07	55	03.5	801
1979	WX3	1990	10	16.09425	23	16	16.74	-07	55	08.1	801
1979	WX3	1990	10	17.03850	23	15	58.23	-07	56	48.0	801
1979	WX3	1990	10	17.08748	23	15	57.19	-07	56	52.6	801
1980	TL13	1990	10	15.41177	07	22	44.86	-07	31	31.6	801
1980	TL13	1990	10	15.41556	07	22	45.02	-07	31	35.3	801
1980	TL13	1990	10	17.40299	07	24	14.55	-08	02	39.5	801
1980	TL13	1990	10	17.41367	07	24	15.02	-08	02	49.6	801
1980	XZ	1990	10	17.11076	23	29	01.10	-21	14	20.0	801
1980	XZ	1990	10	17.14002	23	29	00.23	-21	14	17.0	801
1981	CB1	1988	02	19.36520	10	12	00.73	+21	54	03.6	801
1981	CB1	1990	10	17.27351	02	46	41.94	+15	52	12.2	801
1981	CB1	1990	10	17.28743	02	46	41.20	+15	52	12.6	801
1981	EE9	1986	02	13.22987	08	42	02.10	+13	08	03.1	801
1981	EP20	1990	10	15.23127	01	58	31.03	+12	46	35.2	801
1981	EP20	1990	10	15.25395	01	58	29.79	+12	46	32.5	801
1981	RP2	1990	10	22.33155	03	03	48.75	+35	12	32.0	801
1981	RP2	1990	10	22.35935	03	03	47.14	+35	12	28.6	801
1982	OF	1990	10	20.34479	04	30	23.17	+27	59	08.9	801
1982	OF	1990	10	20.40874	04	30	21.73	+27	59	11.1	801
1982	US6	1990	10	21.27095	02	21	09.23	+10	13	05.1	801
1982	US6	1990	10	21.28813	02	21	08.16	+10	13	05.0	801
1982	UD7	1990	10	20.21478	01	04	49.33	+07	23	51.4	801
1982	UD7	1990	10	20.24229	01	04	48.11	+07	23	35.8	801
1982	UD7	1990	10	21.16542	01	04	09.95	+07	14	51.5	801
1982	UD7	1990	10	21.19365	01	04	08.72	+07	14	35.5	801
1982	UX10	1990	10	17.16987	00	35	55.47	+18	42	07.7	801
1982	UX10	1990	10	17.19182	00	35	54.46	+18	41	52.6	801
1982	UX10	1990	10	18.11779	00	35	13.98	+18	31	19.0	801
1982	UX10	1990	10	18.13522	00	35	13.19	+18	31	07.1	801
1982	WM	1990	10	15.38264	05	32	24.29	+18	31	04.4	801
1982	WM	1990	10	15.39874	05	32	24.71	+18	31	03.7	801
1982	WM	1990	10	17.34645	05	33	16.65	+18	31	31.1	801
1982	WM	1990	10	17.37594	05	33	17.31	+18	31	30.6	801
1983	AJ	1990	10	22.40822	06	22	43.84	+45	26	27.4	801
1983	AJ	1990	10	22.42281	06	22	44.74	+45	26	29.4	801
1984	HL	1990	09	16.12657	21	39	20.66	-13	06	31.0	801
1984	HL	1990	09	19.10799	21	37	49.01	-13	19	30.6	801
1984	SM1	1990	10	20.22852	01	13	04.47	+20	46	14.6	801
1984	SM1	1990	10	20.25215	01	13	03.16	+20	46	12.2	801
1984	SM1	1990	10	22.04186	01	11	26.59	+20	43	07.9	801
1984	SM1	1990	10	22.04806	01	11	26.24	+20	43	07.2	801
1985	CR2	1990	10	21.21516	01	26	36.63	+10	08	56.4	801
1985	CR2	1990	10	21.23395	01	26	35.48	+10	08	49.7	801
1985	PM	1990	10	21.31424	02	47	16.47	+24	46	27.9	801
1985	PM	1990	10	21.33361	02	47	15.37	+24	46	25.5	801
1985	QO6	1990	10	17.30699	03	34	33.37	+12	15	29.6	801

1985 QO6	1990 10	17.32573	03 34	32.70	+12 15	25.2	801
1985 RZ	1990 10	22.40344	05 17	35.90	+44 06	11.5	801
1985 RZ	1990 10	22.41779	05 17	36.56	+44 06	20.1	801
1985 RU3	1990 10	17.39353	06 28	03.75	+07 55	13.5	801
1985 RU3	1990 10	17.41042	06 28	04.50	+07 55	05.5	801
1985 TP	1990 10	17.26605	02 30	01.36	+13 02	14.4	801
1985 TP	1990 10	17.28236	02 30	00.59	+13 02	10.0	801
1985 TZ1	1990 10	16.12580	23 36	42.93	+07 15	49.3	801
1985 TZ1	1990 10	16.14728	23 36	42.34	+07 15	40.0	801
1985 TZ1	1990 10	17.11757	23 36	17.83	+07 08	43.1	801
1985 TZ1	1990 10	17.14431	23 36	17.13	+07 08	31.6	801
1985 UB5	1990 10	16.23677	01 40	58.91	+10 35	26.9	801
1985 UB5	1990 10	16.25969	01 40	57.89	+10 35	15.2	801
1985 UB5	1990 10	17.24206	01 40	15.53	+10 26	50.7	801
1985 UB5	1990 10	17.25064	01 40	15.14	+10 26	46.3	801
1986 AG1	1990 10	16.06968	22 54	32.92	+35 15	51.0	801
1986 AG1	1990 10	16.08797	22 54	32.02	+35 15	40.8	801
1986 AG1	1990 10	17.03522	22 53	50.18	+35 06	55.6	801
1986 AG1	1990 10	17.05163	22 53	49.43	+35 06	46.4	801
1986 JA1	1990 10	15.08166	23 44	47.44	+26 36	55.2	801
1986 JA1	1990 10	15.09171	23 44	47.10	+26 36	43.8	801
1986 JA1	1990 10	16.13285	23 44	13.62	+26 17	01.5	801
1986 JA1	1990 10	16.14394	23 44	13.24	+26 16	48.8	801
1986 QO	1990 10	15.08910	23 54	29.45	+02 42	12.3	801
1986 QO	1990 10	15.11023	23 54	28.63	+02 42	05.8	801
1986 QO	1990 10	16.14137	23 53	51.89	+02 36	52.2	801
1986 QO	1990 10	16.16694	23 53	50.94	+02 36	44.6	801
1986 RS2	1990 10	17.29894	03 56	41.01	+15 07	10.9	801
1986 RS2	1990 10	17.33322	03 56	40.27	+15 07	00.9	801
1986 RS2	1990 10	20.36137	03 55	32.42	+14 51	50.1	801
1986 RS2	1990 10	20.38650	03 55	31.71	+14 51	42.2	801
1986 SC2	1990 10	19.99582	23 57	57.40	+12 24	11.5	801
1986 SC2	1990 10	20.01940	23 57	56.63	+12 23	55.8	801
1986 SC2	1990 10	21.00108	23 57	27.26	+12 13	05.0	801
1986 SC2	1990 10	21.02270	23 57	26.60	+12 12	51.0	801
1986 VE	1990 10	17.17666	00 40	34.72	+22 37	16.0	801
1986 VE	1990 10	17.20933	00 40	33.27	+22 36	52.4	801
1986 VE	1990 10	18.12182	00 39	56.41	+22 25	45.1	801
1986 VE	1990 10	18.13816	00 39	55.71	+22 25	33.1	801
1986 VV6	1990 10	21.26426	02 14	51.46	+06 02	38.3	801
1986 VV6	1990 10	21.28140	02 14	50.48	+06 02	35.0	801
1986 VW6	1990 10	16.03470	22 43	24.92	-13 44	10.1	801
1986 VW6	1990 10	16.09964	22 43	24.08	-13 44	09.4	801
1986 VW6	1990 10	17.01956	22 43	14.70	-13 43	56.3	801
1986 VW6	1990 10	17.10152	22 43	13.78	-13 43	54.6	801
1987 DJ	1988 04	19.27966	14 38	12.44	-03 21	07.4	801
1987 DX5	1990 10	16.22814	01 34	00.77	+25 13	26.8	801
1987 DX5	1990 10	16.25562	01 33	59.28	+25 13	21.7	801
1987 DX5	1990 10	17.22797	01 33	08.37	+25 10	13.1	801
1987 DS6	1990 10	20.23881	01 17	36.43	+02 33	11.6	801
1987 DS6	1990 10	20.25988	01 17	35.54	+02 33	03.5	801
1987 UF1	1990 10	15.99764	21 13	01.26	-22 25	25.0	801
1987 UF1	1990 10	16.01396	21 13	02.24	-22 25	19.7	801
1987 UF1	1990 10	16.99043	21 14	03.93	-22 19	39.7	801
1987 UF1	1990 10	17.00679	21 14	04.94	-22 19	33.9	801
1988 AF	1990 09	19.05191	21 10	39.53	-04 39	47.9	801
1988 AK1	1990 10	15.23546	02 01	20.35	+18 01	50.9	801
1988 AK1	1990 10	15.25789	02 01	18.96	+18 01	47.4	801
1988 BL	1990 10	17.30343	03 39	16.76	+09 27	19.3	801

1988 BL	1990 10	17.32994	03 39	15.99	+09 27	11.2	801
1988 BL	1990 10	20.36595	03 37	46.76	+09 11	34.1	801
1988 BL	1990 10	20.38323	03 37	46.16	+09 11	28.7	801
1988 CK	1990 10	21.31895	02 50	14.42	+31 48	07.2	801
1988 CK	1990 10	21.33841	02 50	13.27	+31 48	09.0	801
1988 CS2	1990 10	20.33274	03 52	28.31	+27 43	14.0	801
1988 CS2	1990 10	20.36951	03 52	27.15	+27 43	14.4	801
1988 GH	1990 10	20.03191	23 57	17.73	-04 36	21.2	801
1988 GH	1990 10	20.05936	23 57	16.66	-04 36	22.8	801
1988 GH	1990 10	20.99532	23 56	42.06	-04 37	12.2	801
1988 GH	1990 10	21.02618	23 56	40.91	-04 37	13.7	801
1988 HB	1990 10	21.23093	01 52	09.32	-10 36	30.7	801
1988 HB	1990 10	21.25257	01 52	08.27	-10 36	33.5	801
1988 JV	1990 10	17.40690	08 05	06.00	+21 04	42.1	801
1988 JV	1990 10	17.42073	08 05	07.09	+21 04	43.5	801
1988 JV	1990 10	20.40405	08 09	01.58	+21 08	46.5	801
1988 JV	1990 10	20.42124	08 09	02.86	+21 08	47.8	801
1988 LF	1990 10	17.31314	05 00	51.65	+04 49	32.9	801
1988 LF	1990 10	17.38285	05 00	51.28	+04 49	24.7	801
1988 QE	1990 10	20.26508	02 30	44.29	+18 49	35.3	801
1988 QE	1990 10	20.32509	02 30	42.41	+18 49	24.4	801
1988 TU2	1990 10	20.35575	05 10	11.29	+24 32	28.1	801
1988 TU2	1990 10	20.41240	05 10	10.54	+24 32	19.3	801
1989 JC	1990 10	15.37867	04 05	08.75	+27 42	22.6	801
1989 JC	1990 10	15.39487	04 05	08.58	+27 42	09.9	801
1989 JC	1990 10	16.30988	04 04	59.93	+27 30	17.7	801
1989 JC	1990 10	16.34339	04 04	59.45	+27 29	51.1	801
1989 KD	1990 10	17.39742	07 10	17.19	+15 34	06.0	801
1989 KD	1990 10	17.41781	07 10	18.19	+15 34	04.6	801
1989 KD	1990 10	20.37709	07 12	51.30	+15 31	41.9	801
1989 KD	1990 10	20.39911	07 12	52.34	+15 31	41.0	801
1989 ME	1990 10	20.01498	00 30	15.24	+44 45	57.4	801
1989 ME	1990 10	20.03582	00 30	13.74	+44 45	55.5	801
1989 ME	1990 10	21.03019	00 29	04.40	+44 43	40.8	801
1989 ME	1990 10	21.04655	00 29	03.24	+44 43	38.5	801
1989 TS1	1990 10	21.24940	02 13	45.57	+28 33	18.1	801
1989 TS1	1990 10	21.27799	02 13	44.46	+28 33	17.3	801
1989 TO11	1990 10	15.27819	03 07	53.93	+10 17	35.7	801
1989 TO11	1990 10	16.27501	03 07	29.88	+10 13	56.9	801
1989 TO11	1990 10	16.31591	03 07	28.89	+10 13	47.3	801
1989 TO11	1990 10	17.29118	03 07	04.89	+10 10	13.1	801
1989 TO11	1990 10	17.32238	03 07	04.09	+10 10	06.0	801
1990 KO	1990 10	15.98861	18 33	37.76	+01 16	02.9	801
1990 KO	1990 10	15.99324	18 33	38.33	+01 16	01.7	801
1990 KO	1990 10	16.96213	18 35	48.16	+01 13	07.2	801
1990 KO	1990 10	16.96589	18 35	48.67	+01 13	06.5	801
1990 KO	1990 10	19.96056	18 42	33.63	+01 04	43.2	801
1990 KO	1990 10	19.96638	18 42	34.47	+01 04	42.3	801
1990 KO	1990 10	20.96089	18 44	50.23	+01 02	07.7	801
1990 KO	1990 10	20.96553	18 44	50.87	+01 02	07.1	801
1990 MJ	1990 10	15.03269	20 03	20.07	+27 11	03.3	801
1990 MJ	1990 10	16.97451	20 06	53.32	+26 58	50.5	801
1990 MJ	1990 10	16.98657	20 06	54.59	+26 58	45.6	801
1990 MJ	1990 10	17.96737	20 08	45.04	+26 52	35.5	801
1990 MJ	1990 10	17.98670	20 08	47.18	+26 52	28.2	801
1990 MJ	1990 10	19.97902	20 12	37.07	+26 40	00.7	801
1990 MJ	1990 10	19.98446	20 12	37.75	+26 39	58.5	801
1990 MJ	1990 10	21.06307	20 14	45.16	+26 33	14.8	801
1990 MJ	1990 10	21.06688	20 14	45.63	+26 33	13.5	801

1990 OB	1990 10	16.97800	20 21	53.50	-03 13	32.2	801
1990 OB	1990 10	16.99410	20 21	54.29	-03 13	40.2	801
1990 OB	1990 10	17.96334	20 22	46.25	-03 20	51.3	801
1990 OB	1990 10	17.98343	20 22	47.22	-03 20	59.4	801
1990 OB	1990 10	22.02269	20 26	38.30	-03 49	16.2	801
1990 OB	1990 10	22.02958	20 26	38.72	-03 49	19.0	801
1990 OE	1990 10	16.02030	20 32	38.34	-02 15	14.0	801
1990 OE	1990 10	16.02880	20 32	38.80	-02 15	16.6	801
1990 OE	1990 10	16.98072	20 33	32.21	-02 19	38.2	801
1990 OE	1990 10	16.99763	20 33	33.14	-02 19	43.0	801
1990 OL	1990 09	16.13816	21 56	05.32	-20 48	19.9	801
1990 OL	1990 09	16.16318	21 56	06.37	-20 48	43.4	801
1990 OL	1990 09	19.12201	21 58	25.87	-21 32	25.4	801
1990 OL	1990 09	19.13322	21 58	26.41	-21 32	33.2	801
1990 OF1	1990 10	16.97009	20 02	22.78	-15 27	09.1	801
1990 OF1	1990 10	16.98361	20 02	23.59	-15 27	10.8	801
1990 OF1	1990 10	17.95845	20 03	25.83	-15 30	03.9	801
1990 OF1	1990 10	17.97968	20 03	27.14	-15 30	09.2	801
1990 OF1	1990 10	19.97421	20 05	37.58	-15 35	36.6	801
1990 OF1	1990 10	19.98837	20 05	38.45	-15 35	39.1	801
1990 OF1	1990 10	20.96998	20 06	44.10	-15 38	08.4	801
1990 OF1	1990 10	20.99065	20 06	45.35	-15 38	12.8	801
1990 OK1	1990 10	15.03751	21 10	49.66	+28 01	20.5	801
1990 OK1	1990 10	15.05238	21 10	50.14	+28 01	22.3	801
1990 OK1	1990 10	16.03134	21 11	26.92	+28 03	16.2	801
1990 QG	1990 10	15.07020	22 11	37.11	-06 14	31.7	801
1990 QG	1990 10	15.10175	22 11	37.40	-06 14	24.7	801
1990 QG	1990 10	17.01066	22 12	03.58	-06 07	12.3	801
1990 QG	1990 10	17.07624	22 12	04.44	-06 06	56.9	801
1990 QJ	1990 10	15.06661	21 26	35.59	+09 50	19.2	801
1990 QJ	1990 10	15.09750	21 26	35.28	+09 50	12.0	801
1990 QJ	1990 10	16.02513	21 26	27.24	+09 46	35.1	801
1990 QJ	1990 10	16.07244	21 26	26.80	+09 46	24.1	801
1990 QJ	1990 10	17.97112	21 26	13.86	+09 39	09.6	801
1990 QJ	1990 10	18.01487	21 26	13.58	+09 38	59.5	801
1990 QJ	1990 10	20.98122	21 26	02.60	+09 28	06.0	801
1990 QJ	1990 10	21.05602	21 26	02.40	+09 27	50.0	801
1990 QO3	1990 10	15.07671	22 42	05.80	-08 54	27.9	801
1990 QO3	1990 10	15.10493	22 42	05.16	-08 54	25.6	801
1990 QO3	1990 10	16.01068	22 41	45.57	-08 53	18.5	801
1990 QO3	1990 10	16.04583	22 41	44.79	-08 53	15.9	801
1990 QO3	1990 10	18.00383	22 41	06.17	-08 50	31.9	801
1990 QO3	1990 10	18.04775	22 41	05.31	-08 50	27.9	801
1990 QO3	1990 10	21.00465	22 40	17.06	-08 45	30.5	801
1990 QO3	1990 10	21.05922	22 40	16.23	-08 45	24.5	801
1990 QP3	1990 10	16.03869	22 49	30.44	-11 24	30.1	801
1990 QP3	1990 10	16.10400	22 49	29.65	-11 24	30.6	801
1990 QP3	1990 10	17.02419	22 49	20.64	-11 24	32.6	801
1990 QP3	1990 10	17.10554	22 49	19.78	-11 24	32.7	801
1990 QP3	1990 10	18.01074	22 49	12.28	-11 24	25.9	801
1990 QP3	1990 10	18.10156	22 49	11.44	-11 24	25.0	801
1990 SB	1990 10	16.20809	01 05	09.33	+00 26	35.8	801
1990 SB	1990 10	16.22007	01 05	08.56	+00 26	22.6	801
1990 SB	1990 10	21.17588	01 00	29.38	-00 59	02.6	801
1990 SB	1990 10	21.18020	01 00	29.14	-00 59	06.8	801
1990 SQ	1990 10	15.05758	21 23	14.37	-04 34	42.8	801
1990 SQ	1990 10	15.06131	21 23	14.15	-04 34	31.5	801
1990 SQ	1990 10	16.02238	21 22	27.08	-03 45	00.3	801
1990 SQ	1990 10	16.02708	21 22	26.82	-03 44	45.7	801

1990 SQ	1990 10	17.97472	21 21	04.53	-02 04	15.2	801
1990 SQ	1990 10	17.97704	21 21	04.42	-02 04	08.1	801
1990 SQ	1990 10	20.97545	21 19	31.29	+00 30	34.6	801
1990 SQ	1990 10	20.97830	21 19	31.20	+00 30	43.4	801
1990 TR	1990 10	20.13216	02 13	31.02	+22 37	57.8	801
1990 TR	1990 10	20.14150	02 13	30.44	+22 38	08.3	801
1990 TR	1990 10	21.13943	02 12	35.75	+22 56	08.0	801
1990 TR	1990 10	21.14380	02 12	35.48	+22 56	12.8	801
1990 UA	1990 10	20.12594	01 29	06.26	-02 47	25.6	801
1990 UA	1990 10	20.12892	01 29	06.29	-02 47	12.3	801
1990 UA	1990 10	21.13431	01 29	43.41	-01 40	54.8	801
1990 UA	1990 10	21.13677	01 29	43.43	-01 40	46.0	801
1990 UV2 *	1990 10	16.06116	23 14	21.12	-02 00	37.5	18 801
1990 UV2	1990 10	16.09108	23 14	20.45	-02 00	42.5	801
1990 UV2	1990 10	17.03168	23 14	03.97	-02 03	14.6	801
1990 UV2	1990 10	17.06736	23 14	03.33	-02 03	20.0	801
1990 UW2 *	1990 10	16.27501	03 07	45.46	+10 15	51.0	17.5 801
1990 UW2	1990 10	16.31591	03 07	43.82	+10 15	45.2	801
1990 UW2	1990 10	17.29118	03 07	05.58	+10 13	24.3	801
1990 UW2	1990 10	17.32238	03 07	04.18	+10 13	22.3	801
1990 UX2 *	1990 10	17.15903	00 23	43.47	+01 39	46.7	801
1990 UX2	1990 10	17.18850	00 23	42.23	+01 39	38.4	801
1990 UX2	1990 10	20.01030	00 21	49.68	+01 26	53.0	801
1990 UX2	1990 10	20.04494	00 21	48.32	+01 26	43.8	801
1990 UX2	1990 10	21.01258	00 21	11.01	+01 22	30.3	801
1990 UX2	1990 10	21.03703	00 21	10.06	+01 22	24.0	801
1990 VB	1990 11	16.96242	22 55	00.52	+21 02	17.4	801
1990 VB	1990 11	16.96604	22 55	01.62	+21 02	14.1	801
1990 VB	1990 11	19.95793	23 09	57.88	+20 25	08.2	801
1990 VB	1990 11	19.96106	23 09	58.76	+20 25	05.8	801
1990 VB	1990 11	20.97284	23 14	55.87	+20 12	29.5	801
1990 VB	1990 11	20.97521	23 14	56.55	+20 12	27.8	801
1990 VX2	1990 11	20.19200	04 07	23.00	+29 07	00.8	801
1990 VX2	1990 11	20.19897	04 07	22.28	+29 07	10.1	801
3040 P-L	1990 10	15.12735	23 57	20.87	+16 00	02.4	801
3040 P-L	1990 10	15.13785	23 57	20.46	+15 59	58.2	801
3040 P-L	1990 10	16.17538	23 56	42.82	+15 53	05.3	801
3040 P-L	1990 10	16.19587	23 56	42.10	+15 52	56.9	801
3233 T-2	1990 10	20.23420	01 15	34.42	-01 33	50.5	801
3233 T-2	1990 10	20.25602	01 15	33.44	-01 33	56.7	801
3233 T-2	1990 10	21.17063	01 14	53.67	-01 38	11.6	801
3233 T-2	1990 10	21.19859	01 14	52.41	-01 38	19.2	801
4069 T-2	1990 10	16.11714	23 31	43.08	-08 37	14.8	801
4069 T-2	1990 10	16.15053	23 31	42.21	-08 37	24.0	801
4069 T-2	1990 10	17.05622	23 31	21.90	-08 41	22.1	801
4069 T-2	1990 10	17.09137	23 31	21.00	-08 41	31.2	801
4170 T-2	1990 10	15.14736	00 07	01.69	-07 05	23.2	801
4170 T-2	1990 10	15.16524	00 07	00.83	-07 05	30.0	801
4170 T-2	1990 10	21.05076	00 02	52.33	-07 38	54.0	801
4170 T-2	1990 10	21.07846	00 02	51.22	-07 39	02.3	801
4239 T-2	1990 10	15.19918	01 06	07.98	+04 12	20.1	801
4239 T-2	1990 10	15.21666	01 06	06.86	+04 12	15.6	801
4239 T-2	1990 10	21.15787	01 00	06.16	+03 48	51.4	801
4239 T-2	1990 10	21.18971	01 00	04.23	+03 48	44.3	801
5066 T-2	1990 10	16.06456	23 04	28.63	+09 15	16.8	801
5066 T-2	1990 10	16.07589	23 04	28.34	+09 15	09.9	801
5066 T-2	1990 10	17.02785	23 04	08.78	+09 05	44.2	801
5066 T-2	1990 10	17.04892	23 04	08.31	+09 05	31.7	801
243	1990 10	15.07345	22 30	17.70	-08 38	16.0	801

243	1990	10	15.10728	22	30	17.17	-08	38	18.6	801
243	1990	10	16.04232	22	30	04.52	-08	39	27.1	801
243	1990	10	16.09661	22	30	03.75	-08	39	30.9	801
243	1990	10	18.00047	22	29	41.91	-08	41	27.9	801
243	1990	10	18.09860	22	29	40.79	-08	41	32.9	801
243	1990	10	20.98438	22	29	17.87	-08	43	32.6	801
243	1990	10	21.11639	22	29	16.93	-08	43	36.5	801
944	1990	10	15.17769	01	00	31.07	-00	47	33.9	801
944	1990	10	15.20391	01	00	28.55	-00	47	18.9	801
1865	1990	10	15.11900	00	00	18.35	+14	31	09.0	801
1865	1990	10	15.12333	00	00	17.78	+14	30	59.5	801
1865	1990	10	16.18537	23	57	53.29	+13	52	50.6	801
1865	1990	10	16.18836	23	57	52.87	+13	52	44.0	801
4615	1990	09	18.20664	23	33	09.00	-07	31	24.3	801
4615	1990	09	18.22206	23	33	07.91	-07	31	21.5	801
4619	1990	10	16.06116	23	14	14.81	-01	59	35.1	801
4619	1990	10	16.09108	23	14	13.95	-01	59	42.3	801
4619	1990	10	17.03168	23	13	48.43	-02	03	08.3	801
4619	1990	10	17.06736	23	13	47.44	-02	03	16.1	801
4621	1990	10	16.12147	23	31	57.92	-02	17	31.0	801
4621	1990	10	16.15758	23	31	57.03	-02	17	41.4	801
4621	1990	10	17.06126	23	31	37.44	-02	21	52.8	801
4621	1990	10	17.09668	23	31	36.61	-02	22	02.5	801
4634	1990	10	17.23847	01	35	43.34	+11	19	23.0	801
4634	1990	10	17.24760	01	35	42.77	+11	19	21.5	801
4639	1990	10	16.17110	23	54	31.55	-06	52	49.0	801
4639	1990	10	16.19160	23	54	30.64	-06	52	48.4	801
4639	1990	10	17.13638	23	53	51.08	-06	52	12.8	801
4639	1990	10	17.15384	23	53	50.37	-06	52	12.2	801
4639	1990	10	18.03270	23	53	14.87	-06	51	31.0	801
4639	1990	10	18.10851	23	53	11.71	-06	51	27.0	801

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1-m Schmidt

SAOC

1927	TC	1990	08	20.23194	23	26	07.37	-06	28	48.6	13.0	809
1927	TC	1990	08	20.24514	23	26	07.36	-06	28	23.7		809
1927	TC	1990	08	20.25833	23	26	07.32	-06	27	58.8		809
1949	SA1	1990	08	18.22361	22	50	03.07	-11	08	34.1	17.3	809
1949	SA1	1990	08	18.23681	22	50	02.55	-11	08	40.0		809
1949	SA1	1990	08	18.25000	22	50	02.02	-11	08	44.3		809
1966	CF	1990	11	15.21111	04	16	02.43	+08	36	15.0	18.2	809
1966	CF	1990	11	17.23611	04	14	01.46	+08	33	06.4		809
1973	SK1	1990	11	15.21111	04	07	58.96	+09	09	52.8	18.6	809
1973	SK1	1990	11	17.23611	04	06	42.77	+09	04	43.2		809
1975	QC	1990	11	15.21111	04	13	58.18	+09	34	01.4	18.0	809
1975	QC	1990	11	17.23611	04	11	56.50	+09	24	53.7		809
1976	GO3	1990	08	20.23194	23	15	35.14	-07	25	33.7	18.5	809
1976	GO3	1990	08	20.24514	23	15	34.54	-07	25	38.3		809
1976	GO3	1990	08	20.25833	23	15	33.99	-07	25	43.6		809
1976	GO3	1990	08	26.20347	23	11	08.47	-07	58	31.1	18.8	809
1976	GO3	1990	08	26.21667	23	11	07.85	-07	58	35.6		809
1976	GO3	1990	08	26.22986	23	11	07.19	-07	58	40.4		809
1977	DB1	1990	08	20.23194	23	16	16.17	-06	28	20.9	19.2	809
1977	DB1	1990	08	20.24514	23	16	15.50	-06	28	26.3		809

1977 DB1	1990 08	20.25833	23 16	14.85	-06 28	30.6		809
1977 DB1	1990 08	26.20347	23 11	42.30	-07 05	22.7	19.4	809
1977 DB1	1990 08	26.21667	23 11	41.64	-07 05	27.4		809
1977 DB1	1990 08	26.22986	23 11	40.97	-07 05	32.9		809
1977 RJ6	1990 09	22.17153	00 29	56.07	-00 43	12.2	17.7	809
1977 RJ6	1990 09	22.18472	00 29	55.18	-00 43	14.7		809
1977 RJ6	1990 09	22.19792	00 29	54.33	-00 43	18.4		809
1977 RJ6	1990 09	25.22153	00 26	36.13	-00 54	37.0	18.0	809
1977 RJ6	1990 09	25.23472	00 26	35.22	-00 54	40.0		809
1977 RJ6	1990 09	25.24792	00 26	34.33	-00 54	42.7		809
1978 NY7	1990 09	22.17153	00 34	28.09	-00 57	21.2	17.4	809
1978 NY7	1990 09	22.18472	00 34	27.45	-00 57	25.8		809
1978 NY7	1990 09	22.19792	00 34	26.83	-00 57	29.0		809
1978 NY7	1990 09	25.22153	00 32	13.61	-01 12	16.7	17.9	809
1978 NY7	1990 09	25.23472	00 32	12.96	-01 12	20.9		809
1978 NY7	1990 09	25.24792	00 32	12.35	-01 12	24.3		809
1979 SS	1990 08	16.21389	23 00	44.89	-06 39	10.8	18.5	809
1979 SS	1990 08	16.22708	23 00	44.21	-06 39	10.8		809
1979 SS	1990 08	16.24028	23 00	43.61	-06 39	10.6		809
1979 SS	1990 08	18.22361	22 59	12.22	-06 38	02.0	18.3	809
1979 SS	1990 08	18.23681	22 59	11.47	-06 38	01.6		809
1979 SS	1990 08	18.25000	22 59	10.78	-06 38	00.8		809
1980 RJ	1990 08	20.23194	23 22	18.36	-07 52	45.5	18.0	809
1980 RJ	1990 08	20.24514	23 22	17.70	-07 52	46.6		809
1980 RJ	1990 08	20.25833	23 22	16.97	-07 52	47.0		809
1980 RJ	1990 08	26.20347	23 17	10.50	-08 01	35.2	17.8	809
1980 RJ	1990 08	26.21667	23 17	09.74	-08 01	37.1		809
1980 RJ	1990 08	26.22986	23 17	08.95	-08 01	37.9		809
1980 YB	1990 10	16.29792	03 02	55.04	+08 43	17.5	18.5	809
1980 YB	1990 10	20.24444	02 59	45.63	+08 26	28.9	18.2	809
1980 YB	1990 10	20.27083	02 59	44.28	+08 26	22.2		809
1981 EP26	1990 10	16.29792	03 06	34.53	+10 12	42.1		809
1981 EP26	1990 10	20.24444	03 03	35.75	+09 48	26.8	18.8	809
1981 EP26	1990 10	20.27083	03 03	34.52	+09 48	17.4		809
1984 FS	1990 08	16.21389	23 03	41.42	-10 34	14.4	18.4	809
1984 FS	1990 08	16.22708	23 03	40.90	-10 34	21.5		809
1984 FS	1990 08	16.24028	23 03	40.36	-10 34	29.4		809
1984 FS	1990 08	18.22361	23 02	24.76	-10 52	13.5	18.5	809
1984 FS	1990 08	18.23681	23 02	24.13	-10 52	20.3		809
1984 FS	1990 08	18.25000	23 02	23.59	-10 52	27.6		809
1985 PJ	1990 08	16.21389	22 57	40.96	-06 37	53.5	18.3	809
1985 PJ	1990 08	16.22708	22 57	40.39	-06 37	56.3		809
1985 PJ	1990 08	16.24028	22 57	39.85	-06 37	59.6		809
1985 PJ	1990 08	18.22361	22 56	19.09	-06 45	03.7	18.0	809
1985 PJ	1990 08	18.23681	22 56	18.48	-06 45	06.6		809
1985 PJ	1990 08	18.25000	22 56	17.89	-06 45	08.8		809
1985 VP3	1990 08	20.23194	23 31	21.17	-05 47	53.0	17.6	809
1985 VP3	1990 08	20.24514	23 31	20.72	-05 47	56.3		809
1985 VP3	1990 08	20.25833	23 31	20.29	-05 47	58.7		809
1985 VP3	1990 08	26.20347	23 27	59.72	-06 11	17.9	17.8	809
1985 VP3	1990 08	26.21667	23 27	59.20	-06 11	21.5		809
1985 VP3	1990 08	26.22986	23 27	58.68	-06 11	25.1		809
1988 EM1	1990 09	25.22153	00 24	22.42	-00 13	25.5	18.3	809
1988 EM1	1990 09	25.23472	00 24	21.79	-00 13	32.2		809
1988 EM1	1990 09	25.24792	00 24	21.19	-00 13	39.2		809
1989 CB1	1990 08	20.23194	23 29	59.06	-07 43	13.4	18.1	809
1989 CB1	1990 08	20.24514	23 29	58.45	-07 43	20.6		809
1989 CB1	1990 08	20.25833	23 29	57.84	-07 43	27.9		809
1989 CB1	1990 08	26.20347	23 25	31.45	-08 36	01.8	17.9	809

1989	CB1	1990	08	26.21667	23	25	30.74	-08	36	09.8		809
1989	CB1	1990	08	26.22986	23	25	30.05	-08	36	17.2		809
1989	TO11	1990	10	20.24444	03	04	27.98	+09	58	32.3	18.7	809
1989	TO11	1990	10	20.27083	03	04	26.68	+09	58	31.2		809
1990	QG1	1990	08	20.23194	23	21	50.11	-05	28	39.3	17.9	809
1990	QG1	1990	08	20.24514	23	21	49.43	-05	28	38.7		809
1990	QG1	1990	08	20.25833	23	21	48.76	-05	28	39.0		809
1990	QG1	1990	08	26.20347	23	16	51.11	-05	30	30.3	18.0	809
1990	QG1	1990	08	26.21667	23	16	50.39	-05	30	30.5		809
1990	QG1	1990	08	26.22986	23	16	49.63	-05	30	31.3		809
1990	QH1	1990	08	20.23194	23	22	27.48	-05	07	00.4	18.0	809
1990	QH1	1990	08	20.24514	23	22	26.80	-05	07	01.6		809
1990	QH1	1990	08	20.25833	23	22	26.12	-05	07	02.2		809
1990	QH1	1990	08	26.20347	23	17	29.23	-05	17	23.1	17.9	809
1990	QH1	1990	08	26.21667	23	17	28.52	-05	17	24.2		809
1990	QH1	1990	08	26.22986	23	17	27.77	-05	17	26.4		809
1990	QL1	1990	08	20.23194	23	23	13.50	-03	49	39.0	18.6	809
1990	QL1	1990	08	20.24514	23	23	13.10	-03	49	43.6		809
1990	QL1	1990	08	20.25833	23	23	12.69	-03	49	50.6		809
1990	QL1	1990	08	26.20347	23	20	09.90	-04	34	10.5	18.5	809
1990	QL1	1990	08	26.21667	23	20	09.46	-04	34	16.6		809
1990	QL1	1990	08	26.22986	23	20	08.98	-04	34	23.7		809
1990	QM1	1990	08	20.23194	23	23	33.04	-04	58	01.9	18.3	809
1990	QM1	1990	08	20.24514	23	23	32.56	-04	58	05.7		809
1990	QM1	1990	08	20.25833	23	23	32.12	-04	58	08.8		809
1990	QM1	1990	08	26.20347	23	20	09.37	-05	26	36.7	18.7	809
1990	QM1	1990	08	26.21667	23	20	08.82	-05	26	41.6		809
1990	QM1	1990	08	26.22986	23	20	08.34	-05	26	45.7		809
1990	QR1	1990	08	20.23194	23	28	33.11	-04	27	00.1	18.8	809
1990	QR1	1990	08	20.24514	23	28	32.54	-04	27	05.0		809
1990	QR1	1990	08	20.25833	23	28	32.06	-04	27	07.8		809
1990	QR1	1990	08	26.20347	23	24	42.83	-04	55	04.1	19.0	809
1990	QR1	1990	08	26.21667	23	24	42.31	-04	55	07.9		809
1990	QR1	1990	08	26.22986	23	24	41.76	-04	55	12.5		809
1990	QS1	1990	08	20.23194	23	29	52.39	-05	13	12.7	18.6	809
1990	QS1	1990	08	20.24514	23	29	51.82	-05	13	14.3		809
1990	QS1	1990	08	20.25833	23	29	51.20	-05	13	17.8		809
1990	QS1	1990	08	26.20347	23	25	37.21	-05	34	24.7	18.8	809
1990	QS1	1990	08	26.21667	23	25	36.51	-05	34	28.1		809
1990	QS1	1990	08	26.22986	23	25	35.96	-05	34	30.8		809
1990	QX1	1990	08	20.23194	23	34	45.00	-04	22	37.1	18.6	809
1990	QX1	1990	08	20.24514	23	34	44.48	-04	22	40.1		809
1990	QX1	1990	08	20.25833	23	34	44.03	-04	22	43.4		809
1990	QY1	1990	08	20.23194	23	35	07.57	-04	45	20.4	18.3	809
1990	QY1	1990	08	20.24514	23	35	07.11	-04	45	26.5		809
1990	QY1	1990	08	20.25833	23	35	06.72	-04	45	31.4		809
1990	QZ2	1990	08	20.23194	23	23	50.81	-05	14	09.5	18.6	809
1990	QZ2	1990	08	20.24514	23	23	50.33	-05	14	10.5		809
1990	QZ2	1990	08	20.25833	23	23	49.85	-05	14	11.2		809
1990	QZ2	1990	08	26.20347	23	20	29.26	-05	23	52.2	18.5	809
1990	QZ2	1990	08	26.21667	23	20	28.74	-05	23	53.5		809
1990	QZ2	1990	08	26.22986	23	20	28.21	-05	23	56.0		809
1990	QB3	1990	08	20.23194	23	26	34.41	-03	32	01.0	18.7	809
1990	QB3	1990	08	20.24514	23	26	33.96	-03	32	06.0		809
1990	QB3	1990	08	20.25833	23	26	33.50	-03	32	11.5		809
1990	QB3	1990	08	26.20347	23	23	05.04	-04	13	50.7	18.7	809
1990	QB3	1990	08	26.21667	23	23	04.49	-04	13	56.1		809
1990	QB3	1990	08	26.22986	23	23	03.84	-04	14	02.7		809
1990	QC3	1990	08	20.23194	23	27	35.31	-03	04	40.4	18.4	809

1990	QC3	1990	08	20.24514	23	27	34.89	-03	04	45.2		809
1990	QC3	1990	08	20.25833	23	27	34.48	-03	04	49.8		809
1990	QD3	1990	08	20.23194	23	30	15.50	-03	06	05.8	18.8	809
1990	QD3	1990	08	20.24514	23	30	14.88	-03	06	03.8		809
1990	QD3	1990	08	20.25833	23	30	14.24	-03	06	01.3		809
1990	QG3	1990	08	26.20347	23	26	43.11	-07	28	07.0	18.2	809
1990	QG3	1990	08	26.21667	23	26	42.74	-07	28	08.6		809
1990	QG3	1990	08	26.22986	23	26	42.41	-07	28	10.0		809
1990	QH3	1990	08	20.23194	23	35	06.33	-04	05	23.7	18.3	809
1990	QH3	1990	08	20.24514	23	35	05.57	-04	05	15.7		809
1990	QH3	1990	08	20.25833	23	35	04.84	-04	05	07.6		809
1990	QO3	1990	08	20.23194	23	22	15.34	-07	58	38.2	18.2	809
1990	QO3	1990	08	20.24514	23	22	14.68	-07	58	39.3		809
1990	QO3	1990	08	20.25833	23	22	14.08	-07	58	41.1		809
1990	QO3	1990	08	26.20347	23	17	54.68	-08	09	01.3	18.2	809
1990	QO3	1990	08	26.21667	23	17	54.08	-08	09	03.3		809
1990	QO3	1990	08	26.22986	23	17	53.47	-08	09	04.3		809
1990	QP3	1990	08	20.23194	23	22	17.95	-07	58	49.6	18.2	809
1990	QP3	1990	08	20.24514	23	22	17.38	-07	58	53.6		809
1990	QP3	1990	08	20.25833	23	22	16.90	-07	58	57.3		809
1990	QP3	1990	08	26.20347	23	18	46.50	-08	27	44.2	18.4	809
1990	QP3	1990	08	26.21667	23	18	45.95	-08	27	47.6		809
1990	QP3	1990	08	26.22986	23	18	45.39	-08	27	52.3		809
1990	QS3	1990	08	20.23194	23	32	09.92	-03	46	00.6	18.7	809
1990	QS3	1990	08	20.24514	23	32	09.57	-03	46	06.9		809
1990	QS3	1990	08	20.25833	23	32	09.11	-03	46	13.3		809
1990	QW3	1990	08	20.23194	23	16	43.83	-03	17	36.5	18.5	809
1990	QW3	1990	08	20.24514	23	16	43.20	-03	17	38.3		809
1990	QW3	1990	08	20.25833	23	16	42.54	-03	17	41.3		809
1990	QX3	1990	08	26.20347	23	13	03.93	-04	45	31.1	18.6	809
1990	QX3	1990	08	26.21667	23	13	03.31	-04	45	29.6		809
1990	QX3	1990	08	26.22986	23	13	02.69	-04	45	27.5		809
1990	QY3	1990	08	20.23194	23	19	25.50	-04	16	49.9	18.0	809
1990	QY3	1990	08	20.24514	23	19	24.88	-04	16	52.1		809
1990	QY3	1990	08	20.25833	23	19	24.20	-04	16	54.2		809
1990	QY3	1990	08	26.20347	23	14	30.91	-04	37	04.8	18.5	809
1990	QY3	1990	08	26.21667	23	14	30.24	-04	37	07.4		809
1990	QY3	1990	08	26.22986	23	14	29.49	-04	37	11.4		809
1990	QZ3	1990	08	20.23194	23	19	53.81	-05	01	18.1	18.6	809
1990	QZ3	1990	08	20.24514	23	19	53.25	-05	01	26.1		809
1990	QZ3	1990	08	20.25833	23	19	52.88	-05	01	31.2		809
1990	QZ3	1990	08	26.20347	23	16	27.30	-05	54	03.2	18.6	809
1990	QZ3	1990	08	26.21667	23	16	26.71	-05	54	10.3		809
1990	QZ3	1990	08	26.22986	23	16	26.25	-05	54	17.3		809
1990	QA4	1990	08	16.21389	22	58	17.76	-07	05	33.6	18.8	809
1990	QA4	1990	08	16.22708	22	58	17.09	-07	05	35.4		809
1990	QA4	1990	08	16.24028	22	58	16.38	-07	05	37.4		809
1990	QA4	1990	08	18.22361	22	56	33.62	-07	11	14.5	18.6	809
1990	QA4	1990	08	18.23681	22	56	32.84	-07	11	16.6		809
1990	QA4	1990	08	18.25000	22	56	32.06	-07	11	18.8		809
1990	QB4	1990	08	16.21389	22	56	19.84	-06	38	46.0	18.5	809
1990	QB4	1990	08	16.22708	22	56	19.37	-06	38	50.1		809
1990	QB4	1990	08	16.24028	22	56	18.86	-06	38	54.3		809
1990	QB4	1990	08	18.22361	22	55	08.46	-06	49	53.0	18.7	809
1990	QB4	1990	08	18.23681	22	55	07.87	-06	49	57.6		809
1990	QB4	1990	08	18.25000	22	55	07.41	-06	50	01.7		809
1990	QF4	1990	08	16.21389	23	02	59.51	-07	16	06.7	18.5	809
1990	QF4	1990	08	16.22708	23	02	58.99	-07	16	13.4		809
1990	QF4	1990	08	16.24028	23	02	58.42	-07	16	19.6		809

1990 QF4	1990 08 18.22361	23 01 36.47	-07 31 59.4	18.6	809
1990 QF4	1990 08 18.23681	23 01 35.81	-07 32 05.9		809
1990 QF4	1990 08 18.25000	23 01 35.26	-07 32 12.8		809
1990 QH4	1990 08 16.21389	23 05 45.01	-08 22 15.5	18.8	809
1990 QH4	1990 08 16.22708	23 05 44.44	-08 22 15.0		809
1990 QH4	1990 08 16.24028	23 05 43.86	-08 22 16.1		809
1990 QH4	1990 08 18.22361	23 04 21.99	-08 22 30.5	18.6	809
1990 QH4	1990 08 18.23681	23 04 21.35	-08 22 30.5		809
1990 QH4	1990 08 18.25000	23 04 20.68	-08 22 30.6		809
1990 QO4	1990 08 26.20347	23 10 28.65	-09 02 35.5	18.7	809
1990 QO4	1990 08 26.21667	23 10 27.95	-09 02 38.0		809
1990 QO4	1990 08 26.22986	23 10 27.26	-09 02 39.6		809
1990 QP4	1990 08 20.23194	23 19 21.71	-05 16 41.5	18.7	809
1990 QP4	1990 08 20.24514	23 19 21.11	-05 16 43.4		809
1990 QP4	1990 08 20.25833	23 19 20.56	-05 16 44.6		809
1990 QD5	1990 08 26.20347	23 12 08.73	-09 12 22.0	18.6	809
1990 QD5	1990 08 26.21667	23 12 08.00	-09 12 29.2		809
1990 QD5	1990 08 26.22986	23 12 07.43	-09 12 36.9		809
1990 QF5	1990 08 26.20347	23 12 51.07	-09 26 21.4	18.5	809
1990 QF5	1990 08 26.21667	23 12 50.38	-09 26 22.5		809
1990 QF5	1990 08 26.22986	23 12 49.74	-09 26 24.7		809
1990 QJ5	1990 08 20.23194	23 24 39.35	-07 44 09.2	18.4	809
1990 QJ5	1990 08 20.24514	23 24 38.78	-07 44 11.3		809
1990 QJ5	1990 08 20.25833	23 24 38.24	-07 44 13.5		809
1990 QJ5	1990 08 26.20347	23 20 49.22	-08 03 04.8	18.5	809
1990 QJ5	1990 08 26.21667	23 20 48.60	-08 03 07.8		809
1990 QJ5	1990 08 26.22986	23 20 47.98	-08 03 11.3		809
1990 QO5	1990 08 16.21389	22 55 00.75	-10 17 52.8	18.7	809
1990 QO5	1990 08 16.22708	22 55 00.14	-10 17 56.7		809
1990 QO5	1990 08 16.24028	22 54 59.52	-10 18 01.6		809
1990 QO5	1990 08 18.22361	22 53 26.08	-10 28 57.0	18.7	809
1990 QO5	1990 08 18.23681	22 53 25.30	-10 29 01.2		809
1990 QO5	1990 08 18.25000	22 53 24.55	-10 29 05.3		809
1990 QR5	1990 08 16.21389	22 59 14.57	-08 41 19.7	18.2	809
1990 QR5	1990 08 16.22708	22 59 14.04	-08 41 24.2		809
1990 QR5	1990 08 16.24028	22 59 13.55	-08 41 27.9		809
1990 QR5	1990 08 18.22361	22 58 00.76	-08 51 22.3	18.6	809
1990 QR5	1990 08 18.23681	22 58 00.12	-08 51 27.3		809
1990 QR5	1990 08 18.25000	22 57 59.58	-08 51 30.9		809
1990 QW5	1990 08 16.21389	22 50 54.46	-07 01 18.9	18.7	809
1990 QW5	1990 08 16.22708	22 50 53.74	-07 01 18.2		809
1990 QW5	1990 08 16.24028	22 50 52.94	-07 01 16.4		809
1990 QW5	1990 08 18.22361	22 49 00.59	-06 57 25.3	18.5	809
1990 QW5	1990 08 18.23681	22 48 59.76	-06 57 23.8		809
1990 QW5	1990 08 18.25000	22 48 58.93	-06 57 22.2		809
1990 QX5	1990 08 16.21389	22 54 33.91	-06 09 59.6	18.5	809
1990 QX5	1990 08 16.22708	22 54 33.18	-06 09 57.9		809
1990 QX5	1990 08 16.24028	22 54 32.47	-06 09 56.1		809
1990 QX5	1990 08 18.22361	22 52 49.90	-06 05 36.6	18.7	809
1990 QX5	1990 08 18.23681	22 52 49.09	-06 05 35.0		809
1990 QX5	1990 08 18.25000	22 52 48.42	-06 05 33.1		809
1990 QY5	1990 08 16.21389	22 54 46.06	-06 23 59.3	18.3	809
1990 QY5	1990 08 16.22708	22 54 45.35	-06 23 57.4		809
1990 QY5	1990 08 16.24028	22 54 44.63	-06 23 55.2		809
1990 QY5	1990 08 18.22361	22 52 59.77	-06 18 01.9	18.2	809
1990 QY5	1990 08 18.23681	22 52 59.00	-06 17 59.6		809
1990 QY5	1990 08 18.25000	22 52 58.25	-06 17 56.4		809
1990 QA6	1990 08 16.21389	22 58 22.62	-09 27 14.6	18.4	809
1990 QA6	1990 08 16.22708	22 58 22.01	-09 27 15.5		809

1990 QA6	1990 08 16.24028	22 58 21.42	-09 27 16.2		809
1990 QA6	1990 08 18.22361	22 56 53.32	-09 30 18.5	18.3	809
1990 QA6	1990 08 18.23681	22 56 52.55	-09 30 19.8		809
1990 QA6	1990 08 18.25000	22 56 51.90	-09 30 21.3		809
1990 QC6	1990 08 20.23194	23 14 34.26	-06 08 35.5	18.6	809
1990 QC6	1990 08 20.24514	23 14 33.63	-06 08 39.0		809
1990 QC6	1990 08 20.25833	23 14 33.05	-06 08 43.2		809
1990 QC6	1990 08 26.20347	23 10 12.37	-06 38 51.4	18.6	809
1990 QC6	1990 08 26.21667	23 10 11.67	-06 38 56.1		809
1990 QC6	1990 08 26.22986	23 10 11.06	-06 39 00.8		809
1990 QF6 *	1990 08 20.23194	23 14 53.85	-06 21 00.0	18.8	809
1990 QF6	1990 08 20.24514	23 14 53.41	-06 21 03.9		809
1990 QF6	1990 08 20.25833	23 14 52.98	-06 21 09.6		809
1990 QF6	1990 08 26.20347	23 11 50.47	-06 59 07.8	19.7	809
1990 QF6	1990 08 26.21667	23 11 49.90	-06 59 14.3		809
1990 QF6	1990 08 26.22986	23 11 49.37	-06 59 21.2		809
1990 QG6 *	1990 08 20.23194	23 15 44.04	-03 55 42.5	18.7	809
1990 QG6	1990 08 20.24514	23 15 43.49	-03 55 46.4		809
1990 QG6	1990 08 20.25833	23 15 42.92	-03 55 49.4		809
1990 QG6	1990 08 26.20347	23 11 58.67	-04 21 38.0	19.4	809
1990 QG6	1990 08 26.21667	23 11 58.09	-04 21 41.7		809
1990 QG6	1990 08 26.22986	23 11 57.48	-04 21 45.8		809
1990 QH6 *	1990 08 20.23194	23 15 44.95	-05 52 22.1	18.6	809
1990 QH6	1990 08 20.24514	23 15 44.54	-05 52 26.6		809
1990 QH6	1990 08 20.25833	23 15 43.95	-05 52 33.1		809
1990 QH6	1990 08 26.20347	23 12 13.79	-06 36 07.8	18.7	809
1990 QH6	1990 08 26.21667	23 12 13.27	-06 36 13.8		809
1990 QH6	1990 08 26.22986	23 12 12.64	-06 36 20.0		809
1990 QJ6 *	1990 08 20.23194	23 16 51.82	-05 40 53.4	18.5	809
1990 QJ6	1990 08 20.24514	23 16 51.23	-05 40 57.2		809
1990 QJ6	1990 08 20.25833	23 16 50.67	-05 41 00.1		809
1990 QJ6	1990 08 26.20347	23 13 04.10	-06 05 49.2	18.7	809
1990 QJ6	1990 08 26.21667	23 13 03.57	-06 05 53.4		809
1990 QJ6	1990 08 26.22986	23 13 03.01	-06 05 57.1		809
1990 QK6 *	1990 08 20.23194	23 17 39.86	-05 27 35.9	19.6	809
1990 QK6	1990 08 20.24514	23 17 39.37	-05 27 37.1		809
1990 QK6	1990 08 20.25833	23 17 38.89	-05 27 39.3		809
1990 QK6	1990 08 26.20347	23 14 53.63	-05 33 08.2	18.7	809
1990 QK6	1990 08 26.21667	23 14 53.04	-05 33 11.0		809
1990 QK6	1990 08 26.22986	23 14 52.33	-05 33 13.6		809
1990 QL6 *	1990 08 20.23194	23 18 09.76	-07 03 25.6	19.5	809
1990 QL6	1990 08 20.24514	23 18 08.99	-07 03 30.9		809
1990 QL6	1990 08 20.25833	23 18 08.41	-07 03 35.7		809
1990 QL6	1990 08 26.20347	23 13 06.03	-07 37 13.2	18.7	809
1990 QL6	1990 08 26.21667	23 13 05.31	-07 37 19.7		809
1990 QL6	1990 08 26.22986	23 13 04.45	-07 37 24.9		809
1990 QM6 *	1990 08 20.23194	23 18 48.63	-06 17 00.3	20.0	809
1990 QM6	1990 08 20.24514	23 18 48.16	-06 17 03.7		809
1990 QM6	1990 08 20.25833	23 18 47.66	-06 17 05.7		809
1990 QM6	1990 08 26.20347	23 15 04.39	-06 58 20.7	19.6	809
1990 QM6	1990 08 26.21667	23 15 03.75	-06 58 24.5		809
1990 QM6	1990 08 26.22986	23 15 03.23	-06 58 28.6		809
1990 QN6 *	1990 08 20.23194	23 18 52.61	-06 34 02.8	19.7	809
1990 QN6	1990 08 20.24514	23 18 52.14	-06 34 07.0		809
1990 QN6	1990 08 20.25833	23 18 51.58	-06 34 11.1		809
1990 QN6	1990 08 26.20347	23 15 03.59	-07 08 15.2	19.4	809
1990 QN6	1990 08 26.21667	23 15 02.76	-07 08 16.8		809
1990 QN6	1990 08 26.22986	23 15 02.11	-07 08 18.6		809
1990 QO6 *	1990 08 20.23194	23 19 07.19	-05 05 38.5	18.2	809

1990	QO6	1990	08	20.24514	23	19	06.82	-05	05	48.4		809	
1990	QO6	1990	08	20.25833	23	19	06.40	-05	05	57.9		809	
1990	QO6	1990	08	26.20347	23	16	11.22	-06	20	03.6	18.5	809	
1990	QO6	1990	08	26.21667	23	16	10.75	-06	20	13.2		809	
1990	QO6	1990	08	26.22986	23	16	10.29	-06	20	23.2		809	
1990	QP6	*	1990	08	20.23194	23	21	54.16	-06	08	38.2	19.1	809
1990	QP6	1990	08	20.24514	23	21	53.41	-06	08	39.6		809	
1990	QP6	1990	08	20.25833	23	21	52.68	-06	08	42.3		809	
1990	QP6	1990	08	26.20347	23	16	26.68	-06	27	57.9	19.5	809	
1990	QP6	1990	08	26.21667	23	16	25.90	-06	27	59.7		809	
1990	QP6	1990	08	26.22986	23	16	25.14	-06	28	03.5		809	
1990	QQ6	*	1990	08	20.23194	23	22	48.59	-07	11	53.4	18.7	809
1990	QQ6	1990	08	20.24514	23	22	47.91	-07	11	58.4		809	
1990	QQ6	1990	08	20.25833	23	22	47.28	-07	12	03.0		809	
1990	QQ6	1990	08	26.20347	23	18	11.89	-07	47	34.0	18.6	809	
1990	QQ6	1990	08	26.21667	23	18	11.19	-07	47	40.7		809	
1990	QQ6	1990	08	26.22986	23	18	10.45	-07	47	45.9		809	
1990	QR6	*	1990	08	20.23194	23	23	13.79	-05	26	33.3	19.2	809
1990	QR6	1990	08	20.24514	23	23	13.22	-05	26	38.5		809	
1990	QR6	1990	08	20.25833	23	23	12.69	-05	26	43.6		809	
1990	QR6	1990	08	26.20347	23	19	17.29	-06	11	27.5	19.6	809	
1990	QR6	1990	08	26.21667	23	19	16.73	-06	11	30.7		809	
1990	QR6	1990	08	26.22986	23	19	16.16	-06	11	35.3		809	
1990	QS6	*	1990	08	20.23194	23	23	42.13	-07	32	17.2	18.6	809
1990	QS6	1990	08	20.24514	23	23	41.52	-07	32	20.0		809	
1990	QS6	1990	08	20.25833	23	23	40.77	-07	32	22.7		809	
1990	QS6	1990	08	26.20347	23	19	03.76	-07	55	09.4	18.7	809	
1990	QS6	1990	08	26.21667	23	19	03.05	-07	55	12.8		809	
1990	QS6	1990	08	26.22986	23	19	02.37	-07	55	16.7		809	
1990	QT6	*	1990	08	20.23194	23	23	57.74	-05	17	25.2	19.3	809
1990	QT6	1990	08	20.24514	23	23	57.11	-05	17	29.0		809	
1990	QT6	1990	08	20.25833	23	23	56.41	-05	17	32.4		809	
1990	QT6	1990	08	26.20347	23	19	03.76	-05	44	18.2	19.5	809	
1990	QT6	1990	08	26.21667	23	19	03.11	-05	44	21.8		809	
1990	QT6	1990	08	26.22986	23	19	02.48	-05	44	24.9		809	
1990	QU6	*	1990	08	20.23194	23	24	08.78	-07	04	03.6	19.5	809
1990	QU6	1990	08	20.24514	23	24	08.46	-07	04	08.3		809	
1990	QU6	1990	08	20.25833	23	24	08.02	-07	04	14.5		809	
1990	QU6	1990	08	26.20347	23	21	16.70	-07	43	46.0	19.4	809	
1990	QU6	1990	08	26.21667	23	21	16.21	-07	43	51.8		809	
1990	QU6	1990	08	26.22986	23	21	15.67	-07	43	59.2		809	
1990	QV6	*	1990	08	20.23194	23	24	38.20	-05	31	07.8	18.7	809
1990	QV6	1990	08	20.24514	23	24	37.94	-05	31	15.8		809	
1990	QV6	1990	08	20.25833	23	24	37.63	-05	31	23.2		809	
1990	QV6	1990	08	26.20347	23	22	50.46	-06	26	22.6	19.5	809	
1990	QV6	1990	08	26.21667	23	22	50.13	-06	26	30.6		809	
1990	QV6	1990	08	26.22986	23	22	49.84	-06	26	38.3		809	
1990	QW6	*	1990	08	20.23194	23	24	49.11	-07	33	57.3	18.6	809
1990	QW6	1990	08	20.24514	23	24	48.54	-07	34	04.1		809	
1990	QW6	1990	08	20.25833	23	24	47.95	-07	34	11.1		809	
1990	QW6	1990	08	26.20347	23	20	34.84	-08	26	37.1	18.7	809	
1990	QW6	1990	08	26.21667	23	20	34.17	-08	26	45.3		809	
1990	QW6	1990	08	26.22986	23	20	33.59	-08	26	52.4		809	
1990	QX6	*	1990	08	20.23194	23	25	11.00	-05	18	28.3	19.8	809
1990	QX6	1990	08	20.24514	23	25	10.37	-05	18	33.2		809	
1990	QX6	1990	08	20.25833	23	25	09.91	-05	18	38.5		809	
1990	QX6	1990	08	26.20347	23	21	18.10	-05	36	46.8	19.5	809	
1990	QX6	1990	08	26.21667	23	21	17.35	-05	36	50.8		809	
1990	QX6	1990	08	26.22986	23	21	16.61	-05	36	53.3		809	

1990 QY6 *	1990 08 20.23194	23 25 59.32	-06 27 22.0	19.6	809
1990 QY6	1990 08 20.24514	23 25 58.74	-06 27 26.5		809
1990 QY6	1990 08 20.25833	23 25 58.23	-06 27 31.9		809
1990 QY6	1990 08 26.20347	23 22 02.35	-07 05 08.8	19.5	809
1990 QY6	1990 08 26.21667	23 22 01.83	-07 05 14.1		809
1990 QY6	1990 08 26.22986	23 22 01.20	-07 05 20.1		809
1990 QZ6 *	1990 08 20.23194	23 26 15.05	-06 36 14.6	19.5	809
1990 QZ6	1990 08 20.24514	23 26 14.40	-06 36 15.9		809
1990 QZ6	1990 08 20.25833	23 26 13.72	-06 36 15.8		809
1990 QZ6	1990 08 26.20347	23 21 10.68	-06 39 31.6	19.7	809
1990 QZ6	1990 08 26.21667	23 21 09.76	-06 39 32.1		809
1990 QZ6	1990 08 26.22986	23 21 08.94	-06 39 32.7		809
1990 QA7 *	1990 08 20.23194	23 26 46.49	-07 23 53.1	19.2	809
1990 QA7	1990 08 20.24514	23 26 46.00	-07 23 58.7		809
1990 QA7	1990 08 20.25833	23 26 45.52	-07 24 03.6		809
1990 QA7	1990 08 26.20347	23 23 47.72	-08 07 13.9	18.8	809
1990 QA7	1990 08 26.21667	23 23 47.17	-08 07 19.1		809
1990 QA7	1990 08 26.22986	23 23 46.59	-08 07 24.5		809
1990 QB7 *	1990 08 20.23194	23 27 05.25	-07 53 34.5	18.8	809
1990 QB7	1990 08 20.24514	23 27 04.62	-07 53 40.8		809
1990 QB7	1990 08 20.25833	23 27 04.06	-07 53 46.6		809
1990 QB7	1990 08 26.20347	23 22 52.00	-08 40 28.1	18.9	809
1990 QB7	1990 08 26.21667	23 22 51.39	-08 40 34.1		809
1990 QB7	1990 08 26.22986	23 22 50.70	-08 40 40.7		809
1990 QC7 *	1990 08 20.23194	23 27 09.04	-04 12 05.5	18.7	809
1990 QC7	1990 08 20.24514	23 27 08.55	-04 12 08.0		809
1990 QC7	1990 08 20.25833	23 27 08.12	-04 12 11.4		809
1990 QC7	1990 08 26.20347	23 23 39.41	-04 35 42.9	18.8	809
1990 QC7	1990 08 26.21667	23 23 38.92	-04 35 46.3		809
1990 QC7	1990 08 26.22986	23 23 38.34	-04 35 50.2		809
1990 QD7 *	1990 08 20.23194	23 27 22.25	-04 35 30.9	19.4	809
1990 QD7	1990 08 20.24514	23 27 21.87	-04 35 35.6		809
1990 QD7	1990 08 20.25833	23 27 21.40	-04 35 40.5		809
1990 QD7	1990 08 26.20347	23 24 00.15	-05 16 39.2	19.4	809
1990 QD7	1990 08 26.21667	23 23 59.66	-05 16 44.8		809
1990 QD7	1990 08 26.22986	23 23 58.99	-05 16 51.5		809
1990 QE7 *	1990 08 20.23194	23 28 00.00	-04 39 40.8	19.2	809
1990 QE7	1990 08 20.24514	23 27 59.41	-04 39 45.1		809
1990 QE7	1990 08 20.25833	23 27 58.87	-04 39 49.3		809
1990 QE7	1990 08 26.20347	23 23 54.28	-05 11 55.1	19.5	809
1990 QE7	1990 08 26.21667	23 23 53.68	-05 11 59.7		809
1990 QE7	1990 08 26.22986	23 23 53.12	-05 12 05.4		809
1990 QF7 *	1990 08 20.23194	23 28 27.20	-05 59 16.7	18.6	809
1990 QF7	1990 08 20.24514	23 28 26.67	-05 59 19.3		809
1990 QF7	1990 08 20.25833	23 28 26.16	-05 59 21.4		809
1990 QF7	1990 08 26.20347	23 24 41.46	-06 14 49.9	18.8	809
1990 QF7	1990 08 26.21667	23 24 40.85	-06 14 52.9		809
1990 QF7	1990 08 26.22986	23 24 40.23	-06 14 55.0		809
1990 QG7 *	1990 08 20.23194	23 30 09.86	-06 04 08.4	18.7	809
1990 QG7	1990 08 20.24514	23 30 09.44	-06 04 12.9		809
1990 QG7	1990 08 20.25833	23 30 09.03	-06 04 18.0		809
1990 QG7	1990 08 26.20347	23 27 11.29	-06 42 26.1	18.4	809
1990 QG7	1990 08 26.21667	23 27 10.77	-06 42 31.6		809
1990 QG7	1990 08 26.22986	23 27 10.33	-06 42 38.2		809
1990 QH7 *	1990 08 20.23194	23 30 22.35	-04 36 45.4	19.3	809
1990 QH7	1990 08 20.24514	23 30 21.65	-04 36 48.1		809
1990 QH7	1990 08 20.25833	23 30 21.05	-04 36 50.7		809
1990 QH7	1990 08 26.20347	23 25 32.86	-04 58 19.4	19.4	809
1990 QH7	1990 08 26.21667	23 25 32.21	-04 58 23.0		809

1990	QH7		1990	08	26.22986	23	25	31.48	-04	58	25.8		809
1990	QJ7	*	1990	08	20.23194	23	30	26.83	-04	19	08.3	18.5	809
1990	QJ7		1990	08	20.24514	23	30	26.27	-04	19	15.1		809
1990	QJ7		1990	08	20.25833	23	30	25.79	-04	19	20.8		809
1990	QJ7		1990	08	26.20347	23	26	32.56	-05	09	02.5	18.6	809
1990	QJ7		1990	08	26.21667	23	26	32.03	-05	09	09.4		809
1990	QJ7		1990	08	26.22986	23	26	31.44	-05	09	16.8		809
1990	QK7	*	1990	08	20.23194	23	30	34.33	-05	13	39.2	18.8	809
1990	QK7		1990	08	20.24514	23	30	33.93	-05	13	44.7		809
1990	QK7		1990	08	20.25833	23	30	33.47	-05	13	51.6		809
1990	QK7		1990	08	26.20347	23	27	18.63	-05	57	14.8	19.2	809
1990	QK7		1990	08	26.21667	23	27	18.20	-05	57	21.6		809
1990	QK7		1990	08	26.22986	23	27	17.64	-05	57	27.2		809
1990	QL7	*	1990	08	20.23194	23	30	51.83	-06	15	19.1	19.3	809
1990	QL7		1990	08	20.24514	23	30	51.18	-06	15	22.7		809
1990	QL7		1990	08	20.25833	23	30	50.63	-06	15	26.7		809
1990	QL7		1990	08	26.20347	23	26	21.79	-06	43	01.7	19.5	809
1990	QL7		1990	08	26.21667	23	26	21.04	-06	43	05.9		809
1990	QL7		1990	08	26.22986	23	26	20.41	-06	43	10.4		809
1990	QM7	*	1990	08	20.23194	23	30	59.77	-07	44	16.0	18.5	809
1990	QM7		1990	08	20.24514	23	30	59.07	-07	44	18.2		809
1990	QM7		1990	08	20.25833	23	30	58.41	-07	44	19.6		809
1990	QM7		1990	08	26.20347	23	25	57.60	-07	59	34.2	18.7	809
1990	QM7		1990	08	26.21667	23	25	56.87	-07	59	36.3		809
1990	QM7		1990	08	26.22986	23	25	56.10	-07	59	37.9		809
1990	QN7	*	1990	08	20.23194	23	32	41.36	-07	23	55.7	18.4	809
1990	QN7		1990	08	20.24514	23	32	40.74	-07	23	58.6		809
1990	QN7		1990	08	20.25833	23	32	40.15	-07	24	02.8		809
1990	QN7		1990	08	26.20347	23	27	51.23	-07	53	08.4	18.5	809
1990	QN7		1990	08	26.21667	23	27	50.54	-07	53	12.2		809
1990	QN7		1990	08	26.22986	23	27	49.82	-07	53	16.9		809
1990	QO7	*	1990	08	16.21389	22	47	23.69	-07	49	06.5	19.2	809
1990	QO7		1990	08	16.22708	22	47	23.11	-07	49	08.4		809
1990	QO7		1990	08	16.24028	22	47	22.55	-07	49	13.3		809
1990	QO7		1990	08	18.22361	22	46	05.34	-07	57	16.4	19.4	809
1990	QO7		1990	08	18.23681	22	46	04.74	-07	57	19.7		809
1990	QO7		1990	08	18.25000	22	46	04.21	-07	57	22.1		809
1990	QP7	*	1990	08	16.21389	22	48	02.17	-09	50	47.5	18.8	809
1990	QP7		1990	08	16.22708	22	48	01.36	-09	50	52.8		809
1990	QP7		1990	08	16.24028	22	48	00.73	-09	50	59.3		809
1990	QP7		1990	08	18.22361	22	46	23.90	-10	04	11.9	18.8	809
1990	QP7		1990	08	18.23681	22	46	23.19	-10	04	17.2		809
1990	QP7		1990	08	18.25000	22	46	22.46	-10	04	23.3		809
1990	QQ7	*	1990	08	16.21389	22	48	48.36	-07	26	17.9	19.5	809
1990	QQ7		1990	08	16.22708	22	48	47.73	-07	26	18.3		809
1990	QQ7		1990	08	16.24028	22	48	47.11	-07	26	19.7		809
1990	QQ7		1990	08	18.22361	22	47	19.76	-07	29	11.3	19.8	809
1990	QQ7		1990	08	18.23681	22	47	19.12	-07	29	13.3		809
1990	QQ7		1990	08	18.25000	22	47	18.40	-07	29	14.9		809
1990	QR7	*	1990	08	16.21389	22	49	22.65	-09	53	46.7	18.8	809
1990	QR7		1990	08	16.22708	22	49	22.02	-09	53	49.4		809
1990	QR7		1990	08	16.24028	22	49	21.36	-09	53	52.6		809
1990	QR7		1990	08	18.22361	22	47	53.70	-10	00	16.3	19.0	809
1990	QR7		1990	08	18.23681	22	47	53.00	-10	00	19.6		809
1990	QR7		1990	08	18.25000	22	47	52.31	-10	00	22.4		809
1990	QS7	*	1990	08	16.21389	22	49	23.47	-08	43	56.1	19.3	809
1990	QS7		1990	08	16.22708	22	49	22.81	-08	44	00.3		809
1990	QS7		1990	08	16.24028	22	49	22.34	-08	44	04.0		809
1990	QS7		1990	08	18.22361	22	47	57.90	-08	52	00.8	19.3	809

1990	QS7	1990	08	18.23681	22	47	57.16	-08	52	04.8		809
1990	QS7	1990	08	18.25000	22	47	56.55	-08	52	08.8		809
1990	QT7	* 1990	08	16.21389	22	49	46.81	-06	21	54.0	18.8	809
1990	QT7	1990	08	16.22708	22	49	46.26	-06	21	57.9		809
1990	QT7	1990	08	16.24028	22	49	45.67	-06	22	00.7		809
1990	QT7	1990	08	18.22361	22	48	30.56	-06	29	27.7	18.8	809
1990	QT7	1990	08	18.23681	22	48	29.92	-06	29	31.7		809
1990	QT7	1990	08	18.25000	22	48	29.49	-06	29	34.6		809
1990	QU7	* 1990	08	16.21389	22	50	25.16	-07	53	04.4	18.7	809
1990	QU7	1990	08	16.22708	22	50	24.61	-07	53	07.5		809
1990	QU7	1990	08	16.24028	22	50	24.06	-07	53	11.7		809
1990	QU7	1990	08	18.22361	22	49	03.60	-08	02	49.3	19.0	809
1990	QU7	1990	08	18.23681	22	49	03.01	-08	02	53.0		809
1990	QU7	1990	08	18.25000	22	49	02.35	-08	02	56.9		809
1990	QV7	* 1990	08	16.21389	22	50	40.27	-06	31	04.9	18.7	809
1990	QV7	1990	08	16.22708	22	50	39.64	-06	31	08.1		809
1990	QV7	1990	08	16.24028	22	50	39.14	-06	31	10.8		809
1990	QV7	1990	08	18.22361	22	49	23.76	-06	38	38.3	18.8	809
1990	QV7	1990	08	18.23681	22	49	23.12	-06	38	41.3		809
1990	QV7	1990	08	18.25000	22	49	22.55	-06	38	44.6		809
1990	QW7	* 1990	08	16.21389	22	51	12.58	-09	53	13.2	18.7	809
1990	QW7	1990	08	16.22708	22	51	12.36	-09	53	24.4		809
1990	QW7	1990	08	16.24028	22	51	12.09	-09	53	34.6		809
1990	QW7	1990	08	18.22361	22	50	38.33	-10	21	29.1	19.3	809
1990	QW7	1990	08	18.23681	22	50	38.01	-10	21	40.1		809
1990	QW7	1990	08	18.25000	22	50	37.62	-10	21	51.6		809
1990	QX7	* 1990	08	16.21389	22	51	21.41	-06	55	30.0	18.8	809
1990	QX7	1990	08	16.22708	22	51	20.85	-06	55	32.7		809
1990	QX7	1990	08	16.24028	22	51	20.27	-06	55	35.1		809
1990	QX7	1990	08	18.22361	22	50	04.47	-07	01	41.7	18.7	809
1990	QX7	1990	08	18.23681	22	50	03.94	-07	01	43.9		809
1990	QX7	1990	08	18.25000	22	50	03.36	-07	01	46.4		809
1990	QY7	* 1990	08	16.21389	22	51	26.48	-07	05	29.3	18.5	809
1990	QY7	1990	08	16.22708	22	51	25.72	-07	05	32.1		809
1990	QY7	1990	08	16.24028	22	51	24.95	-07	05	34.8		809
1990	QY7	1990	08	18.22361	22	49	34.84	-07	12	01.8	18.3	809
1990	QY7	1990	08	18.23681	22	49	34.02	-07	12	04.8		809
1990	QY7	1990	08	18.25000	22	49	33.34	-07	12	06.0		809
1990	QZ7	* 1990	08	16.21389	22	51	27.34	-07	03	40.1	18.5	809
1990	QZ7	1990	08	16.22708	22	51	26.76	-07	03	42.6		809
1990	QZ7	1990	08	16.24028	22	51	26.21	-07	03	44.2		809
1990	QZ7	1990	08	18.22361	22	50	09.59	-07	09	04.9	18.6	809
1990	QZ7	1990	08	18.23681	22	50	09.00	-07	09	06.5		809
1990	QZ7	1990	08	18.25000	22	50	08.39	-07	09	08.2		809
1990	QA8	* 1990	08	16.21389	22	51	40.74	-07	43	27.5	19.2	809
1990	QA8	1990	08	16.22708	22	51	40.21	-07	43	32.7		809
1990	QA8	1990	08	16.24028	22	51	39.82	-07	43	37.9		809
1990	QA8	1990	08	18.22361	22	50	38.75	-07	55	52.6	18.8	809
1990	QA8	1990	08	18.23681	22	50	38.19	-07	55	58.4		809
1990	QA8	1990	08	18.25000	22	50	37.70	-07	56	03.8		809
1990	QB8	* 1990	08	16.21389	22	52	00.83	-08	02	42.2	19.6	809
1990	QB8	1990	08	16.22708	22	52	00.29	-08	02	47.6		809
1990	QB8	1990	08	16.24028	22	51	59.66	-08	02	54.6		809
1990	QB8	1990	08	18.22361	22	50	39.74	-08	15	34.7	19.5	809
1990	QB8	1990	08	18.23681	22	50	39.22	-08	15	39.4		809
1990	QB8	1990	08	18.25000	22	50	38.69	-08	15	45.4		809
1990	QC8	* 1990	08	16.21389	22	52	38.12	-09	21	30.4	18.7	809
1990	QC8	1990	08	16.22708	22	52	37.41	-09	21	36.6		809
1990	QC8	1990	08	16.24028	22	52	36.81	-09	21	43.5		809

1990	QC8	1990	08	18.22361	22	51	01.20	-09	35	45.0	18.8	809
1990	QC8	1990	08	18.23681	22	51	00.43	-09	35	51.4		809
1990	QC8	1990	08	18.25000	22	50	59.73	-09	35	55.3		809
1990	QD8	* 1990	08	16.21389	22	53	42.54	-07	49	05.0	18.8	809
1990	QD8	1990	08	16.22708	22	53	42.03	-07	49	10.4		809
1990	QD8	1990	08	16.24028	22	53	41.55	-07	49	15.7		809
1990	QD8	1990	08	18.22361	22	52	34.05	-08	01	21.1	18.6	809
1990	QD8	1990	08	18.23681	22	52	33.44	-08	01	25.7		809
1990	QD8	1990	08	18.25000	22	52	32.95	-08	01	30.4		809
1990	QE8	* 1990	08	16.21389	22	53	43.06	-09	54	13.4	18.6	809
1990	QE8	1990	08	16.22708	22	53	42.53	-09	54	18.5		809
1990	QE8	1990	08	16.24028	22	53	41.94	-09	54	25.6		809
1990	QE8	1990	08	18.22361	22	52	22.33	-10	07	17.9	18.7	809
1990	QE8	1990	08	18.23681	22	52	21.78	-10	07	22.5		809
1990	QE8	1990	08	18.25000	22	52	21.12	-10	07	29.0		809
1990	QF8	* 1990	08	16.21389	22	53	47.39	-10	31	41.7	18.9	809
1990	QF8	1990	08	16.22708	22	53	46.80	-10	31	47.4		809
1990	QF8	1990	08	16.24028	22	53	46.24	-10	31	52.3		809
1990	QF8	1990	08	18.22361	22	52	20.65	-10	44	25.5	19.1	809
1990	QF8	1990	08	18.23681	22	52	19.94	-10	44	30.1		809
1990	QF8	1990	08	18.25000	22	52	19.20	-10	44	36.3		809
1990	QG8	* 1990	08	16.21389	22	53	49.99	-07	58	44.2	19.7	809
1990	QG8	1990	08	16.22708	22	53	49.54	-07	58	53.1		809
1990	QG8	1990	08	16.24028	22	53	49.19	-07	59	00.6		809
1990	QG8	1990	08	18.22361	22	53	26.66	-08	12	35.7	19.4	809
1990	QG8	1990	08	18.23681	22	53	26.22	-08	12	43.3		809
1990	QG8	1990	08	18.25000	22	53	25.74	-08	12	51.2		809
1990	QH8	* 1990	08	16.21389	22	54	01.62	-09	20	23.1	18.8	809
1990	QH8	1990	08	16.22708	22	54	00.97	-09	20	28.5		809
1990	QH8	1990	08	16.24028	22	54	00.28	-09	20	33.1		809
1990	QH8	1990	08	18.22361	22	52	31.86	-09	32	16.6	19.0	809
1990	QH8	1990	08	18.23681	22	52	31.19	-09	32	20.9		809
1990	QH8	1990	08	18.25000	22	52	30.62	-09	32	25.3		809
1990	QJ8	* 1990	08	16.21389	22	54	08.26	-10	39	26.3	19.0	809
1990	QJ8	1990	08	16.22708	22	54	07.77	-10	39	30.2		809
1990	QJ8	1990	08	16.24028	22	54	07.24	-10	39	33.9		809
1990	QJ8	1990	08	18.22361	22	52	50.84	-10	47	54.7	19.4	809
1990	QJ8	1990	08	18.23681	22	52	50.22	-10	47	58.2		809
1990	QJ8	1990	08	18.25000	22	52	49.65	-10	48	01.6		809
1990	QK8	* 1990	08	16.21389	22	54	21.17	-08	55	55.6	19.3	809
1990	QK8	1990	08	16.22708	22	54	20.54	-08	55	59.5		809
1990	QK8	1990	08	16.24028	22	54	19.92	-08	56	04.3		809
1990	QK8	1990	08	18.22361	22	53	00.85	-09	05	52.0	19.2	809
1990	QK8	1990	08	18.23681	22	53	00.24	-09	05	55.6		809
1990	QK8	1990	08	18.25000	22	52	59.66	-09	05	58.2		809
1990	QL8	* 1990	08	16.21389	22	54	30.96	-05	40	14.4	18.8	809
1990	QL8	1990	08	16.22708	22	54	30.57	-05	40	17.5		809
1990	QL8	1990	08	16.24028	22	54	30.07	-05	40	21.0		809
1990	QL8	1990	08	18.22361	22	53	18.81	-05	50	18.2	19.0	809
1990	QL8	1990	08	18.23681	22	53	18.23	-05	50	23.1		809
1990	QL8	1990	08	18.25000	22	53	17.72	-05	50	26.1		809
1990	QM8	* 1990	08	16.21389	22	54	34.63	-08	08	41.4	18.8	809
1990	QM8	1990	08	16.22708	22	54	34.02	-08	08	43.8		809
1990	QM8	1990	08	16.24028	22	54	33.33	-08	08	46.7		809
1990	QM8	1990	08	18.22361	22	52	59.76	-08	14	06.4	19.2	809
1990	QM8	1990	08	18.23681	22	52	58.93	-08	14	08.6		809
1990	QM8	1990	08	18.25000	22	52	58.23	-08	14	10.5		809
1990	QN8	* 1990	08	16.21389	22	54	46.19	-08	42	29.7	19.6	809
1990	QN8	1990	08	16.22708	22	54	45.51	-08	42	32.0		809

1990 QN8	1990 08 16.24028	22 54 44.74	-08 42 33.7		809
1990 QN8	1990 08 18.22361	22 53 23.19	-08 46 37.6	19.4	809
1990 QN8	1990 08 18.23681	22 53 22.54	-08 46 39.7		809
1990 QN8	1990 08 18.25000	22 53 21.84	-08 46 42.4		809
1990 QO8 *	1990 08 16.21389	22 55 08.03	-09 30 53.6	18.7	809
1990 QO8	1990 08 16.22708	22 55 07.24	-09 30 53.9		809
1990 QO8	1990 08 16.24028	22 55 06.48	-09 30 54.2		809
1990 QO8	1990 08 18.22361	22 53 19.42	-09 32 26.4	18.7	809
1990 QO8	1990 08 18.23681	22 53 18.69	-09 32 27.3		809
1990 QO8	1990 08 18.25000	22 53 17.87	-09 32 28.2		809
1990 QP8 *	1990 08 16.21389	22 55 15.58	-06 53 36.9	19.6	809
1990 QP8	1990 08 16.22708	22 55 14.85	-06 53 40.5		809
1990 QP8	1990 08 16.24028	22 55 14.26	-06 53 44.1		809
1990 QP8	1990 08 18.22361	22 53 47.80	-07 01 58.2	19.0	809
1990 QP8	1990 08 18.23681	22 53 47.14	-07 02 01.8		809
1990 QP8	1990 08 18.25000	22 53 46.57	-07 02 05.7		809
1990 QQ8 *	1990 08 16.21389	22 55 53.19	-10 27 50.8	19.2	809
1990 QQ8	1990 08 16.22708	22 55 52.64	-10 27 53.8		809
1990 QQ8	1990 08 16.24028	22 55 52.09	-10 27 58.7		809
1990 QQ8	1990 08 18.22361	22 54 37.43	-10 36 08.0	19.3	809
1990 QQ8	1990 08 18.23681	22 54 36.87	-10 36 11.8		809
1990 QQ8	1990 08 18.25000	22 54 36.35	-10 36 15.3		809
1990 QR8 *	1990 08 16.21389	22 57 10.20	-10 03 06.1	19.2	809
1990 QR8	1990 08 16.22708	22 57 09.69	-10 03 12.9		809
1990 QR8	1990 08 16.24028	22 57 09.22	-10 03 19.3		809
1990 QR8	1990 08 18.22361	22 56 01.68	-10 18 13.9	19.5	809
1990 QR8	1990 08 18.23681	22 56 01.12	-10 18 21.8		809
1990 QR8	1990 08 18.25000	22 56 00.47	-10 18 27.7		809
1990 QS8 *	1990 08 16.21389	22 57 28.64	-09 25 11.7	18.7	809
1990 QS8	1990 08 16.22708	22 57 27.94	-09 25 14.3		809
1990 QS8	1990 08 16.24028	22 57 27.20	-09 25 16.4		809
1990 QS8	1990 08 18.22361	22 55 45.22	-09 31 10.6	18.6	809
1990 QS8	1990 08 18.23681	22 55 44.39	-09 31 13.3		809
1990 QS8	1990 08 18.25000	22 55 43.67	-09 31 15.5		809
1990 QT8 *	1990 08 16.21389	22 57 33.71	-08 03 23.3	19.0	809
1990 QT8	1990 08 16.22708	22 57 33.17	-08 03 29.2		809
1990 QT8	1990 08 16.24028	22 57 32.46	-08 03 36.0		809
1990 QT8	1990 08 18.22361	22 56 06.63	-08 20 20.6	19.4	809
1990 QT8	1990 08 18.23681	22 56 05.94	-08 20 27.2		809
1990 QT8	1990 08 18.25000	22 56 05.40	-08 20 32.5		809
1990 QU8 *	1990 08 16.21389	22 57 40.07	-09 19 20.3	19.6	809
1990 QU8	1990 08 16.22708	22 57 39.63	-09 19 22.6		809
1990 QU8	1990 08 16.24028	22 57 39.20	-09 19 28.1		809
1990 QU8	1990 08 18.22361	22 56 24.47	-09 27 29.6	20.0	809
1990 QU8	1990 08 18.23681	22 56 23.96	-09 27 32.2		809
1990 QU8	1990 08 18.25000	22 56 23.50	-09 27 34.5		809
1990 QV8 *	1990 08 16.21389	22 58 13.45	-07 50 57.7	18.8	809
1990 QV8	1990 08 16.22708	22 58 12.82	-07 51 01.0		809
1990 QV8	1990 08 16.24028	22 58 12.23	-07 51 04.0		809
1990 QV8	1990 08 18.22361	22 56 43.37	-07 58 25.3	18.7	809
1990 QV8	1990 08 18.23681	22 56 42.67	-07 58 29.3		809
1990 QV8	1990 08 18.25000	22 56 41.99	-07 58 32.7		809
1990 QW8 *	1990 08 16.21389	22 58 20.82	-08 04 09.4	18.8	809
1990 QW8	1990 08 16.22708	22 58 20.18	-08 04 13.8		809
1990 QW8	1990 08 16.24028	22 58 19.61	-08 04 17.6		809
1990 QW8	1990 08 18.22361	22 57 06.22	-08 12 02.2	18.7	809
1990 QW8	1990 08 18.23681	22 57 05.60	-08 12 05.8		809
1990 QW8	1990 08 18.25000	22 57 05.07	-08 12 09.4		809
1990 QX8 *	1990 08 16.21389	22 58 35.63	-08 57 53.3	18.9	809

1990 QX8	1990 08 16.22708	22 58 35.07	-08 57 57.7	809
1990 QX8	1990 08 16.24028	22 58 34.53	-08 57 59.7	809
1990 QX8	1990 08 18.22361	22 57 13.79	-09 05 39.7	18.7 809
1990 QX8	1990 08 18.23681	22 57 13.16	-09 05 42.9	809
1990 QX8	1990 08 18.25000	22 57 12.68	-09 05 45.4	809
1990 QY8 *	1990 08 16.21389	22 59 33.59	-09 51 00.8	18.7 809
1990 QY8	1990 08 16.22708	22 59 33.04	-09 51 06.4	809
1990 QY8	1990 08 16.24028	22 59 32.46	-09 51 09.6	809
1990 QY8	1990 08 18.22361	22 58 16.54	-10 02 01.6	19.0 809
1990 QY8	1990 08 18.23681	22 58 15.95	-10 02 05.5	809
1990 QY8	1990 08 18.25000	22 58 15.41	-10 02 09.8	809
1990 QZ8 *	1990 08 16.21389	23 01 24.84	-09 03 47.5	19.7 809
1990 QZ8	1990 08 16.22708	23 01 24.17	-09 03 53.8	809
1990 QZ8	1990 08 16.24028	23 01 23.60	-09 03 59.7	809
1990 QZ8	1990 08 18.22361	22 59 55.66	-09 16 45.3	19.1 809
1990 QZ8	1990 08 18.23681	22 59 54.99	-09 16 49.6	809
1990 QZ8	1990 08 18.25000	22 59 54.36	-09 16 54.0	809
1990 QA9 *	1990 08 16.21389	23 01 52.13	-10 18 13.3	18.7 809
1990 QA9	1990 08 16.22708	23 01 51.59	-10 18 17.3	809
1990 QA9	1990 08 16.24028	23 01 51.09	-10 18 21.4	809
1990 QA9	1990 08 18.22361	23 00 40.46	-10 27 06.6	18.2 809
1990 QA9	1990 08 18.23681	23 00 39.87	-10 27 10.4	809
1990 QA9	1990 08 18.25000	23 00 39.34	-10 27 13.6	809
1990 QB9 *	1990 08 16.21389	23 02 06.80	-08 00 03.3	18.6 809
1990 QB9	1990 08 16.22708	23 02 06.35	-08 00 11.2	809
1990 QB9	1990 08 16.24028	23 02 05.92	-08 00 19.1	809
1990 QB9	1990 08 18.22361	23 01 04.27	-08 18 50.5	18.8 809
1990 QB9	1990 08 18.23681	23 01 03.73	-08 18 58.6	809
1990 QB9	1990 08 18.25000	23 01 03.21	-08 19 05.0	809
1990 QC9 *	1990 08 16.21389	23 02 16.81	-08 22 21.8	18.6 809
1990 QC9	1990 08 16.22708	23 02 16.13	-08 22 23.9	809
1990 QC9	1990 08 16.24028	23 02 15.52	-08 22 26.0	809
1990 QC9	1990 08 18.22361	23 00 39.93	-08 27 16.1	18.7 809
1990 QC9	1990 08 18.23681	23 00 39.23	-08 27 17.6	809
1990 QC9	1990 08 18.25000	23 00 38.54	-08 27 19.5	809
1990 QD9 *	1990 08 16.21389	23 02 37.18	-07 04 50.4	18.7 809
1990 QD9	1990 08 16.22708	23 02 36.62	-07 04 53.3	809
1990 QD9	1990 08 16.24028	23 02 36.03	-07 04 55.6	809
1990 QD9	1990 08 18.22361	23 01 16.53	-07 12 09.7	18.7 809
1990 QD9	1990 08 18.23681	23 01 15.87	-07 12 12.3	809
1990 QD9	1990 08 18.25000	23 01 15.27	-07 12 14.6	809
1990 QE9 *	1990 08 16.21389	23 02 42.54	-06 54 19.1	18.7 809
1990 QE9	1990 08 16.22708	23 02 41.97	-06 54 23.0	809
1990 QE9	1990 08 16.24028	23 02 41.40	-06 54 26.1	809
1990 QE9	1990 08 18.22361	23 01 22.25	-07 01 39.5	18.7 809
1990 QE9	1990 08 18.23681	23 01 21.62	-07 01 42.3	809
1990 QE9	1990 08 18.25000	23 01 21.05	-07 01 45.4	809
1990 QF9 *	1990 08 16.21389	23 02 52.61	-09 18 21.0	19.6 809
1990 QF9	1990 08 16.22708	23 02 52.09	-09 18 29.5	809
1990 QF9	1990 08 16.24028	23 02 51.58	-09 18 35.2	809
1990 QF9	1990 08 18.22361	23 01 38.06	-09 35 22.2	19.5 809
1990 QF9	1990 08 18.23681	23 01 37.46	-09 35 30.4	809
1990 QF9	1990 08 18.25000	23 01 36.88	-09 35 36.2	809
1990 QG9 *	1990 08 16.21389	23 03 17.94	-09 08 31.5	19.7 809
1990 QG9	1990 08 16.22708	23 03 17.41	-09 08 38.0	809
1990 QG9	1990 08 16.24028	23 03 16.82	-09 08 42.8	809
1990 QG9	1990 08 18.22361	23 01 59.39	-09 17 17.2	19.7 809
1990 QG9	1990 08 18.23681	23 01 58.81	-09 17 19.9	809
1990 QG9	1990 08 18.25000	23 01 58.17	-09 17 24.1	809

1990	QH9	*	1990	08	16.21389	23	03	24.38	-10	12	40.4	18.7	809
1990	QH9		1990	08	16.22708	23	03	23.95	-10	12	45.7		809
1990	QH9		1990	08	16.24028	23	03	23.49	-10	12	51.0		809
1990	QH9		1990	08	18.22361	23	02	20.58	-10	25	37.8	18.6	809
1990	QH9		1990	08	18.23681	23	02	19.95	-10	25	44.0		809
1990	QH9		1990	08	18.25000	23	02	19.45	-10	25	48.9		809
1990	QJ9	*	1990	08	16.21389	23	04	02.61	-10	28	46.9	19.2	809
1990	QJ9		1990	08	16.22708	23	04	02.04	-10	28	51.7		809
1990	QJ9		1990	08	16.24028	23	04	01.42	-10	28	54.8		809
1990	QJ9		1990	08	18.22361	23	02	42.10	-10	37	40.2	19.5	809
1990	QJ9		1990	08	18.23681	23	02	41.06	-10	37	46.7		809
1990	QJ9		1990	08	18.25000	23	02	39.99	-10	37	49.1		809
1990	QK9	*	1990	08	16.21389	23	04	58.70	-09	44	00.8	18.8	809
1990	QK9		1990	08	16.22708	23	04	58.14	-09	44	10.1		809
1990	QK9		1990	08	16.24028	23	04	57.50	-09	44	18.2		809
1990	QK9		1990	08	18.22361	23	03	40.11	-10	02	42.9	19.6	809
1990	QK9		1990	08	18.23681	23	03	39.52	-10	02	49.9		809
1990	QK9		1990	08	18.25000	23	03	38.99	-10	02	57.3		809
1990	QL9	*	1990	08	16.21389	23	05	01.18	-10	11	55.5	19.4	809
1990	QL9		1990	08	16.22708	23	05	00.56	-10	11	59.2		809
1990	QL9		1990	08	16.24028	23	05	00.04	-10	12	02.7		809
1990	QL9		1990	08	18.22361	23	03	39.77	-10	21	01.8	19.4	809
1990	QL9		1990	08	18.23681	23	03	39.51	-10	21	03.3		809
1990	QL9		1990	08	18.25000	23	03	39.01	-10	21	06.3		809
1990	QM9	*	1990	08	16.21389	23	05	05.14	-10	35	34.9	19.4	809
1990	QM9		1990	08	16.22708	23	05	04.46	-10	35	38.2		809
1990	QM9		1990	08	16.24028	23	05	03.88	-10	35	42.2		809
1990	QM9		1990	08	18.22361	23	03	37.81	-10	42	56.4	19.6	809
1990	QM9		1990	08	18.23681	23	03	36.91	-10	42	58.5		809
1990	QM9		1990	08	18.25000	23	03	36.54	-10	43	02.2		809
1990	QN9	*	1990	08	16.21389	23	05	18.73	-09	23	19.2	18.7	809
1990	QN9		1990	08	16.22708	23	05	18.06	-09	23	25.1		809
1990	QN9		1990	08	16.24028	23	05	17.52	-09	23	30.8		809
1990	QN9		1990	08	18.22361	23	03	51.42	-09	37	47.4	18.8	809
1990	QN9		1990	08	18.23681	23	03	50.76	-09	37	53.2		809
1990	QN9		1990	08	18.25000	23	03	50.06	-09	37	59.7		809
1990	QO9	*	1990	08	16.21389	23	05	34.40	-07	37	31.2	19.8	809
1990	QO9		1990	08	16.22708	23	05	33.74	-07	37	31.6		809
1990	QO9		1990	08	16.24028	23	05	33.09	-07	37	31.5		809
1990	QO9		1990	08	18.22361	23	04	02.37	-07	37	24.7	19.4	809
1990	QO9		1990	08	18.23681	23	04	01.63	-07	37	25.1		809
1990	QO9		1990	08	18.25000	23	04	00.90	-07	37	24.8		809
1990	QP9	*	1990	08	16.21389	23	06	11.17	-09	51	15.0	19.3	809
1990	QP9		1990	08	16.22708	23	06	10.70	-09	51	23.4		809
1990	QP9		1990	08	16.24028	23	06	10.24	-09	51	31.5		809
1990	QP9		1990	08	18.22361	23	04	59.61	-10	10	38.3	20.0	809
1990	QP9		1990	08	18.23681	23	04	59.03	-10	10	47.3		809
1990	QP9		1990	08	18.25000	23	04	58.50	-10	10	54.5		809
1990	QQ9	*	1990	08	16.21389	23	06	31.55	-08	27	01.1	18.7	809
1990	QQ9		1990	08	16.22708	23	06	31.16	-08	27	08.8		809
1990	QQ9		1990	08	16.24028	23	06	30.72	-08	27	16.8		809
1990	QQ9		1990	08	18.22361	23	06	15.22	-08	24	49.9	19.2	809
1990	QQ9		1990	08	18.23681	23	06	14.71	-08	25	00.8		809
1990	QQ9		1990	08	18.25000	23	06	14.27	-08	25	11.4		809
1990	QR9	*	1990	08	16.21389	23	08	05.16	-06	47	51.9	18.8	809
1990	QR9		1990	08	16.22708	23	08	04.70	-06	47	56.8		809
1990	QR9		1990	08	16.24028	23	08	04.26	-06	48	01.9		809
1990	QR9		1990	08	18.22361	23	06	58.74	-07	00	03.4	19.2	809
1990	QR9		1990	08	18.23681	23	06	58.32	-07	00	08.4		809

1990 QR9	1990 08 18.25000	23 06 57.68	-07 00 12.2		809
1990 QT9	1990 08 26.20347	23 08 42.55	-07 44 30.0	18.4	809
1990 QT9	1990 08 26.21667	23 08 41.88	-07 44 35.1		809
1990 QT9	1990 08 26.22986	23 08 41.14	-07 44 40.9		809
1990 RE	1990 08 20.23194	23 18 23.21	-04 54 26.4	18.8	809
1990 RE	1990 08 20.24514	23 18 22.72	-04 54 32.3		809
1990 RE	1990 08 20.25833	23 18 22.30	-04 54 38.9		809
1990 RE	1990 08 26.20347	23 15 04.40	-05 40 46.9	18.9	809
1990 RE	1990 08 26.21667	23 15 03.94	-05 40 53.5		809
1990 RE	1990 08 26.22986	23 15 03.36	-05 40 59.4		809
1990 SV4 *	1990 09 22.17153	00 24 59.73	-01 28 18.3	17.8	809
1990 SV4	1990 09 22.18472	00 24 59.18	-01 28 22.7		809
1990 SV4	1990 09 22.19792	00 24 58.58	-01 28 26.8		809
1990 SV4	1990 09 25.22153	00 22 48.11	-01 44 23.0	17.8	809
1990 SV4	1990 09 25.23472	00 22 47.47	-01 44 27.3		809
1990 SV4	1990 09 25.24792	00 22 46.91	-01 44 31.3		809
1990 SW4 *	1990 09 22.17153	00 25 21.87	-02 01 22.5	17.8	809
1990 SW4	1990 09 22.18472	00 25 21.16	-02 01 29.2		809
1990 SW4	1990 09 22.19792	00 25 20.43	-02 01 35.8		809
1990 SW4	1990 09 25.22153	00 22 48.84	-02 26 25.4	17.7	809
1990 SW4	1990 09 25.23472	00 22 48.15	-02 26 31.4		809
1990 SW4	1990 09 25.24792	00 22 47.41	-02 26 37.6		809
1990 SX4 *	1990 09 22.17153	00 25 31.66	-03 57 31.6	18.7	809
1990 SX4	1990 09 22.18472	00 25 30.93	-03 57 35.9		809
1990 SX4	1990 09 22.19792	00 25 30.20	-03 57 41.6		809
1990 SX4	1990 09 25.22153	00 23 03.13	-04 15 58.5	18.7	809
1990 SX4	1990 09 25.23472	00 23 02.44	-04 16 03.0		809
1990 SX4	1990 09 25.24792	00 23 01.79	-04 16 06.9		809
1990 SY4 *	1990 09 22.17153	00 25 36.98	-00 46 07.5	18.5	809
1990 SY4	1990 09 22.18472	00 25 36.33	-00 46 11.1		809
1990 SY4	1990 09 22.19792	00 25 35.63	-00 46 16.7		809
1990 SY4	1990 09 25.22153	00 23 20.40	-01 03 19.9	18.5	809
1990 SY4	1990 09 25.23472	00 23 19.75	-01 03 24.8		809
1990 SY4	1990 09 25.24792	00 23 19.13	-01 03 28.6		809
1990 SZ4 *	1990 09 22.17153	00 25 41.57	-00 19 36.7	19.6	809
1990 SZ4	1990 09 22.18472	00 25 40.95	-00 19 40.1		809
1990 SZ4	1990 09 22.19792	00 25 40.32	-00 19 44.1		809
1990 SZ4	1990 09 25.22153	00 23 21.48	-00 33 11.9	19.0	809
1990 SZ4	1990 09 25.23472	00 23 20.87	-00 33 15.5		809
1990 SZ4	1990 09 25.24792	00 23 20.20	-00 33 18.4		809
1990 SA5 *	1990 09 22.17153	00 25 58.89	-02 23 37.3	18.8	809
1990 SA5	1990 09 22.18472	00 25 58.20	-02 23 39.2		809
1990 SA5	1990 09 22.19792	00 25 57.67	-02 23 39.5		809
1990 SA5	1990 09 25.22153	00 23 22.34	-02 27 24.4	19.5	809
1990 SA5	1990 09 25.23472	00 23 21.47	-02 27 25.0		809
1990 SA5	1990 09 25.24792	00 23 20.83	-02 27 25.8		809
1990 SB5 *	1990 09 22.17153	00 26 02.26	-02 55 21.6	18.7	809
1990 SB5	1990 09 22.18472	00 26 01.60	-02 55 28.6		809
1990 SB5	1990 09 22.19792	00 26 00.88	-02 55 36.6		809
1990 SB5	1990 09 25.22153	00 23 45.57	-03 22 20.8	18.5	809
1990 SB5	1990 09 25.23472	00 23 44.93	-03 22 26.6		809
1990 SB5	1990 09 25.24792	00 23 44.23	-03 22 35.1		809
1990 SC5 *	1990 09 22.17153	00 26 09.19	-02 22 18.8	18.6	809
1990 SC5	1990 09 22.18472	00 26 08.52	-02 22 23.4		809
1990 SC5	1990 09 22.19792	00 26 07.84	-02 22 28.1		809
1990 SC5	1990 09 25.22153	00 23 44.58	-02 39 32.8	18.6	809
1990 SC5	1990 09 25.23472	00 23 43.90	-02 39 37.5		809
1990 SC5	1990 09 25.24792	00 23 43.22	-02 39 41.4		809
1990 SD5 *	1990 09 22.17153	00 26 13.76	-00 21 05.7	19.1	809

1990	SD5	1990	09	22.18472	00	26	12.76	-00	21	09.9	809
1990	SD5	1990	09	22.19792	00	26	12.07	-00	21	14.4	809
1990	SD5	1990	09	25.22153	00	23	17.58	-00	36	21.0	19.3 809
1990	SD5	1990	09	25.23472	00	23	16.77	-00	36	26.4	809
1990	SD5	1990	09	25.24792	00	23	16.05	-00	36	29.9	809
1990	SE5	* 1990	09	22.17153	00	26	37.67	-02	25	11.9	18.5 809
1990	SE5	1990	09	22.18472	00	26	37.12	-02	25	14.7	809
1990	SE5	1990	09	22.19792	00	26	36.57	-02	25	17.0	809
1990	SE5	1990	09	25.22153	00	24	38.84	-02	35	45.2	18.7 809
1990	SE5	1990	09	25.23472	00	24	38.28	-02	35	47.8	809
1990	SE5	1990	09	25.24792	00	24	37.75	-02	35	50.2	809
1990	SF5	* 1990	09	22.17153	00	27	19.50	-01	17	10.3	18.7 809
1990	SF5	1990	09	22.18472	00	27	18.82	-01	17	16.8	809
1990	SF5	1990	09	22.19792	00	27	18.18	-01	17	23.4	809
1990	SF5	1990	09	25.22153	00	24	56.40	-01	40	09.1	18.7 809
1990	SF5	1990	09	25.23472	00	24	55.68	-01	40	15.3	809
1990	SF5	1990	09	25.24792	00	24	55.05	-01	40	20.3	809
1990	SG5	* 1990	09	22.17153	00	27	31.33	-02	23	10.8	18.9 809
1990	SG5	1990	09	22.18472	00	27	30.68	-02	23	17.4	809
1990	SG5	1990	09	22.19792	00	27	29.97	-02	23	23.5	809
1990	SG5	1990	09	25.22153	00	25	19.44	-02	46	30.0	18.5 809
1990	SG5	1990	09	25.23472	00	25	18.81	-02	46	35.4	809
1990	SG5	1990	09	25.24792	00	25	18.10	-02	46	41.1	809
1990	SH5	* 1990	09	22.17153	00	27	39.58	-03	17	35.7	19.4 809
1990	SH5	1990	09	22.18472	00	27	38.62	-03	17	36.1	809
1990	SH5	1990	09	22.19792	00	27	37.89	-03	17	36.6	809
1990	SH5	1990	09	25.22153	00	24	34.03	-03	17	48.0	19.0 809
1990	SH5	1990	09	25.23472	00	24	33.14	-03	17	48.0	809
1990	SH5	1990	09	25.24792	00	24	32.28	-03	17	48.1	809
1990	SJ5	* 1990	09	22.17153	00	27	47.73	-01	06	48.0	17.6 809
1990	SJ5	1990	09	22.18472	00	27	46.94	-01	06	47.4	809
1990	SJ5	1990	09	22.19792	00	27	46.13	-01	06	46.6	809
1990	SJ5	1990	09	25.22153	00	24	51.77	-01	02	56.1	18.3 809
1990	SJ5	1990	09	25.23472	00	24	50.96	-01	02	55.4	809
1990	SJ5	1990	09	25.24792	00	24	50.14	-01	02	54.1	809
1990	SK5	* 1990	09	22.17153	00	27	50.42	-03	58	51.8	18.3 809
1990	SK5	1990	09	22.18472	00	27	49.76	-03	58	56.3	809
1990	SK5	1990	09	22.19792	00	27	49.20	-03	59	00.8	809
1990	SK5	1990	09	25.22153	00	25	32.73	-04	13	58.7	18.2 809
1990	SK5	1990	09	25.23472	00	25	32.11	-04	14	02.9	809
1990	SK5	1990	09	25.24792	00	25	31.46	-04	14	06.8	809
1990	SL5	* 1990	09	22.17153	00	28	13.23	-02	32	55.7	19.7 809
1990	SL5	1990	09	22.18472	00	28	12.51	-02	32	58.4	809
1990	SL5	1990	09	22.19792	00	28	11.74	-02	33	00.5	809
1990	SL5	1990	09	25.22153	00	25	31.89	-02	43	33.9	18.8 809
1990	SL5	1990	09	25.23472	00	25	31.12	-02	43	36.1	809
1990	SL5	1990	09	25.24792	00	25	30.36	-02	43	39.3	809
1990	SM5	* 1990	09	22.17153	00	28	16.35	-04	35	12.1	18.7 809
1990	SM5	1990	09	22.18472	00	28	15.58	-04	35	15.0	809
1990	SM5	1990	09	22.19792	00	28	14.87	-04	35	17.7	809
1990	SM5	1990	09	25.22153	00	25	28.99	-04	45	18.1	18.6 809
1990	SM5	1990	09	25.23472	00	25	28.18	-04	45	20.8	809
1990	SM5	1990	09	25.24792	00	25	27.35	-04	45	23.6	809
1990	SN5	* 1990	09	22.17153	00	29	46.16	-01	40	13.0	18.5 809
1990	SN5	1990	09	22.18472	00	29	45.30	-01	40	17.8	809
1990	SN5	1990	09	22.19792	00	29	44.54	-01	40	21.1	809
1990	SN5	1990	09	25.22153	00	26	56.93	-01	54	26.8	18.8 809
1990	SN5	1990	09	25.23472	00	26	56.18	-01	54	30.3	809
1990	SN5	1990	09	25.24792	00	26	55.37	-01	54	33.6	809

1990	SO5	*	1990	09	22.17153	00	30	15.30	-04	30	42.1	18.0	809
1990	SO5		1990	09	22.18472	00	30	14.45	-04	30	47.3		809
1990	SO5		1990	09	22.19792	00	30	13.74	-04	30	48.9		809
1990	SO5		1990	09	25.22153	00	27	25.41	-04	43	54.8	18.4	809
1990	SO5		1990	09	25.23472	00	27	24.59	-04	43	57.6		809
1990	SO5		1990	09	25.24792	00	27	23.85	-04	44	01.3		809
1990	SP5	*	1990	09	22.17153	00	30	15.68	-00	54	37.4	18.6	809
1990	SP5		1990	09	22.18472	00	30	14.92	-00	54	41.9		809
1990	SP5		1990	09	22.19792	00	30	14.16	-00	54	45.0		809
1990	SP5		1990	09	25.22153	00	27	21.99	-01	09	42.2	18.5	809
1990	SP5		1990	09	25.23472	00	27	21.22	-01	09	46.6		809
1990	SP5		1990	09	25.24792	00	27	20.45	-01	09	49.4		809
1990	SQ5	*	1990	09	22.17153	00	30	29.23	-03	38	14.1	18.4	809
1990	SQ5		1990	09	22.18472	00	30	28.51	-03	38	19.8		809
1990	SQ5		1990	09	22.19792	00	30	27.80	-03	38	26.0		809
1990	SQ5		1990	09	25.22153	00	27	45.07	-04	01	13.6	18.6	809
1990	SQ5		1990	09	25.23472	00	27	44.27	-04	01	19.4		809
1990	SQ5		1990	09	25.24792	00	27	43.49	-04	01	26.0		809
1990	SR5	*	1990	09	22.17153	00	30	56.15	+00	08	30.2	18.7	809
1990	SR5		1990	09	22.18472	00	30	55.45	+00	08	24.6		809
1990	SR5		1990	09	22.19792	00	30	54.79	+00	08	19.7		809
1990	SR5		1990	09	25.22153	00	28	29.97	-00	11	44.9	18.6	809
1990	SR5		1990	09	25.23472	00	28	29.28	-00	11	50.2		809
1990	SR5		1990	09	25.24792	00	28	28.57	-00	11	55.9		809
1990	SS5	*	1990	09	22.17153	00	30	58.51	-00	21	38.6	17.9	809
1990	SS5		1990	09	22.18472	00	30	57.73	-00	21	43.2		809
1990	SS5		1990	09	22.19792	00	30	57.02	-00	21	49.1		809
1990	SS5		1990	09	25.22153	00	28	16.01	-00	40	44.8	18.3	809
1990	SS5		1990	09	25.23472	00	28	15.29	-00	40	49.7		809
1990	SS5		1990	09	25.24792	00	28	14.52	-00	40	55.5		809
1990	ST5	*	1990	09	22.17153	00	31	20.84	-01	00	07.3	19.3	809
1990	ST5		1990	09	22.18472	00	31	20.09	-01	00	09.5		809
1990	ST5		1990	09	22.19792	00	31	19.38	-01	00	12.1		809
1990	ST5		1990	09	25.22153	00	28	32.75	-01	07	27.8	18.8	809
1990	ST5		1990	09	25.23472	00	28	32.00	-01	07	28.9		809
1990	ST5		1990	09	25.24792	00	28	31.24	-01	07	31.3		809
1990	SU5	*	1990	09	22.17153	00	31	45.56	-03	07	42.2	18.9	809
1990	SU5		1990	09	22.18472	00	31	44.77	-03	07	44.9		809
1990	SU5		1990	09	22.19792	00	31	43.95	-03	07	49.2		809
1990	SU5		1990	09	25.22153	00	28	47.44	-03	20	28.2	18.9	809
1990	SU5		1990	09	25.23472	00	28	46.58	-03	20	32.1		809
1990	SU5		1990	09	25.24792	00	28	45.76	-03	20	35.8		809
1990	SV5	*	1990	09	22.17153	00	31	58.62	-04	06	26.9	18.0	809
1990	SV5		1990	09	22.18472	00	31	57.98	-04	06	32.8		809
1990	SV5		1990	09	22.19792	00	31	57.29	-04	06	38.2		809
1990	SV5		1990	09	25.22153	00	29	34.10	-04	29	59.4	17.9	809
1990	SV5		1990	09	25.23472	00	29	33.43	-04	30	05.7		809
1990	SV5		1990	09	25.24792	00	29	32.70	-04	30	12.0		809
1990	SW5	*	1990	09	22.17153	00	32	03.30	-00	37	53.2	19.3	809
1990	SW5		1990	09	22.18472	00	32	02.66	-00	37	56.6		809
1990	SW5		1990	09	22.19792	00	32	01.96	-00	38	00.5		809
1990	SW5		1990	09	25.22153	00	29	40.81	-00	52	06.7	19.2	809
1990	SW5		1990	09	25.23472	00	29	40.13	-00	52	10.9		809
1990	SW5		1990	09	25.24792	00	29	39.50	-00	52	13.2		809
1990	SX5	*	1990	09	22.17153	00	32	05.04	-00	25	01.5	18.3	809
1990	SX5		1990	09	22.18472	00	32	04.33	-00	25	04.5		809
1990	SX5		1990	09	22.19792	00	32	03.50	-00	25	08.1		809
1990	SX5		1990	09	25.22153	00	29	23.70	-00	39	04.1	18.5	809
1990	SX5		1990	09	25.23472	00	29	23.00	-00	39	07.4		809

1990	SX5		1990	09	25.24792	00	29	22.22	-00	39	11.1		809
1990	SY5	*	1990	09	22.17153	00	32	05.54	-00	55	51.8	19.1	809
1990	SY5		1990	09	22.18472	00	32	04.90	-00	55	57.5		809
1990	SY5		1990	09	22.19792	00	32	04.30	-00	56	00.8		809
1990	SY5		1990	09	25.22153	00	29	40.44	-01	16	12.0	18.8	809
1990	SY5		1990	09	25.23472	00	29	39.77	-01	16	17.1		809
1990	SY5		1990	09	25.24792	00	29	39.15	-01	16	20.8		809
1990	SZ5	*	1990	09	22.17153	00	32	32.93	-03	27	19.6	19.0	809
1990	SZ5		1990	09	22.18472	00	32	32.42	-03	27	24.7		809
1990	SZ5		1990	09	22.19792	00	32	31.90	-03	27	32.7		809
1990	SZ5		1990	09	25.22153	00	30	32.72	-03	52	43.2	18.8	809
1990	SZ5		1990	09	25.23472	00	30	32.17	-03	52	48.6		809
1990	SZ5		1990	09	25.24792	00	30	31.58	-03	52	55.8		809
1990	SA6	*	1990	09	22.17153	00	33	32.74	-02	21	08.2	18.6	809
1990	SA6		1990	09	22.18472	00	33	31.98	-02	21	10.9		809
1990	SA6		1990	09	22.19792	00	33	31.29	-02	21	13.4		809
1990	SA6		1990	09	25.22153	00	30	54.52	-02	28	59.3	18.4	809
1990	SA6		1990	09	25.23472	00	30	53.83	-02	29	01.7		809
1990	SA6		1990	09	25.24792	00	30	53.17	-02	29	02.8		809
1990	SB6	*	1990	09	22.17153	00	33	50.36	-01	14	31.5	18.8	809
1990	SB6		1990	09	22.18472	00	33	49.77	-01	14	36.3		809
1990	SB6		1990	09	22.19792	00	33	49.19	-01	14	39.8		809
1990	SB6		1990	09	25.22153	00	31	35.50	-01	31	59.9	18.8	809
1990	SB6		1990	09	25.23472	00	31	34.84	-01	32	05.3		809
1990	SB6		1990	09	25.24792	00	31	34.22	-01	32	10.0		809
1990	SC6	*	1990	09	22.17153	00	34	04.46	-04	15	47.2	18.6	809
1990	SC6		1990	09	22.18472	00	34	03.76	-04	15	50.6		809
1990	SC6		1990	09	22.19792	00	34	02.99	-04	15	53.9		809
1990	SC6		1990	09	25.22153	00	31	27.32	-04	27	54.6	18.0	809
1990	SC6		1990	09	25.23472	00	31	26.60	-04	27	57.3		809
1990	SC6		1990	09	25.24792	00	31	25.79	-04	28	00.6		809
1990	SD6	*	1990	09	22.17153	00	34	24.69	-04	39	52.5	19.5	809
1990	SD6		1990	09	22.18472	00	34	23.92	-04	39	57.2		809
1990	SD6		1990	09	22.19792	00	34	23.16	-04	40	00.7		809
1990	SD6		1990	09	25.22153	00	31	37.59	-04	53	37.2	18.6	809
1990	SD6		1990	09	25.23472	00	31	36.80	-04	53	40.5		809
1990	SD6		1990	09	25.24792	00	31	35.99	-04	53	44.4		809
1990	SE6	*	1990	09	22.17153	00	34	29.31	-02	05	26.3	18.3	809
1990	SE6		1990	09	22.18472	00	34	28.65	-02	05	33.7		809
1990	SE6		1990	09	22.19792	00	34	28.01	-02	05	42.5		809
1990	SE6		1990	09	25.22153	00	32	10.57	-02	37	02.4	18.5	809
1990	SE6		1990	09	25.23472	00	32	09.90	-02	37	10.3		809
1990	SE6		1990	09	25.24792	00	32	09.25	-02	37	19.7		809
1990	SF6	*	1990	09	22.17153	00	34	35.96	-02	38	04.1	18.7	809
1990	SF6		1990	09	22.18472	00	34	35.54	-02	38	10.7		809
1990	SF6		1990	09	22.19792	00	34	35.10	-02	38	32.3		809
1990	SF6		1990	09	25.22153	00	33	13.56	-03	28	39.1	18.8	809
1990	SF6		1990	09	25.23472	00	33	13.16	-03	28	51.8		809
1990	SF6		1990	09	25.24792	00	33	12.74	-03	29	04.3		809
1990	SG6	*	1990	09	22.17153	00	34	42.93	-03	04	19.0	19.7	809
1990	SG6		1990	09	22.18472	00	34	42.15	-03	04	21.7		809
1990	SG6		1990	09	22.19792	00	34	41.40	-03	04	24.8		809
1990	SG6		1990	09	25.22153	00	32	03.74	-03	14	45.3	18.8	809
1990	SG6		1990	09	25.23472	00	32	02.98	-03	14	47.3		809
1990	SG6		1990	09	25.24792	00	32	02.21	-03	14	50.2		809
1990	SH6	*	1990	09	22.17153	00	35	14.27	-04	11	55.3	18.7	809
1990	SH6		1990	09	22.18472	00	35	13.45	-04	11	58.4		809
1990	SH6		1990	09	22.19792	00	35	12.72	-04	11	58.8		809
1990	SH6		1990	09	25.22153	00	32	19.91	-04	18	13.4	18.6	809

1990	SH6		1990	09	25.23472	00	32	19.04	-04	18	16.3		809
1990	SH6		1990	09	25.24792	00	32	18.18	-04	18	16.9		809
1990	SJ6	*	1990	09	22.17153	00	35	22.38	-01	06	00.5	18.8	809
1990	SJ6		1990	09	22.18472	00	35	21.65	-01	06	05.3		809
1990	SJ6		1990	09	22.19792	00	35	20.96	-01	06	08.3		809
1990	SJ6		1990	09	25.22153	00	32	26.77	-01	24	40.6	19.2	809
1990	SJ6		1990	09	25.23472	00	32	26.05	-01	24	46.0		809
1990	SJ6		1990	09	25.24792	00	32	25.23	-01	24	51.2		809
1990	SK6	*	1990	09	22.17153	00	35	36.37	-02	16	19.8	18.3	809
1990	SK6		1990	09	22.18472	00	35	35.60	-02	16	22.4		809
1990	SK6		1990	09	22.19792	00	35	34.73	-02	16	24.9		809
1990	SK6		1990	09	25.22153	00	32	33.63	-02	27	00.7	18.2	809
1990	SK6		1990	09	25.23472	00	32	32.78	-02	27	03.7		809
1990	SK6		1990	09	25.24792	00	32	31.93	-02	27	06.4		809
1990	SL6	*	1990	09	22.17153	00	35	37.72	-04	21	43.9	19.3	809
1990	SL6		1990	09	22.18472	00	35	37.13	-04	21	48.1		809
1990	SL6		1990	09	22.19792	00	35	36.41	-04	21	54.8		809
1990	SL6		1990	09	25.22153	00	33	10.66	-04	42	04.3	19.3	809
1990	SL6		1990	09	25.23472	00	33	09.95	-04	42	09.9		809
1990	SL6		1990	09	25.24792	00	33	09.29	-04	42	14.7		809
1990	SM6	*	1990	09	22.17153	00	35	44.82	+00	03	41.2	17.4	809
1990	SM6		1990	09	22.18472	00	35	44.03	+00	03	37.7		809
1990	SM6		1990	09	22.19792	00	35	43.24	+00	03	34.4		809
1990	SM6		1990	09	25.22153	00	32	45.89	-00	09	34.7	17.8	809
1990	SM6		1990	09	25.23472	00	32	45.03	-00	09	36.7		809
1990	SM6		1990	09	25.24792	00	32	44.24	-00	09	40.4		809
1990	SN6	*	1990	09	22.17153	00	35	45.00	-04	24	29.4	17.6	809
1990	SN6		1990	09	22.18472	00	35	44.31	-04	24	36.0		809
1990	SN6		1990	09	22.19792	00	35	43.59	-04	24	41.5		809
1990	SN6		1990	09	25.22153	00	33	06.14	-04	46	34.6	17.8	809
1990	SN6		1990	09	25.23472	00	33	05.40	-04	46	39.7		809
1990	SN6		1990	09	25.24792	00	33	04.65	-04	46	45.7		809
1990	SO6	*	1990	09	22.17153	00	35	54.55	-02	50	11.9	19.0	809
1990	SO6		1990	09	22.18472	00	35	53.64	-02	50	17.8		809
1990	SO6		1990	09	22.19792	00	35	52.81	-02	50	22.6		809
1990	SO6		1990	09	25.22153	00	33	03.45	-03	08	43.5	19.2	809
1990	SO6		1990	09	25.23472	00	33	02.62	-03	08	49.2		809
1990	SO6		1990	09	25.24792	00	33	01.76	-03	08	53.5		809
1990	SP6	*	1990	09	22.17153	00	36	09.12	-01	24	32.5	17.8	809
1990	SP6		1990	09	22.18472	00	36	08.54	-01	24	41.2		809
1990	SP6		1990	09	22.19792	00	36	07.94	-01	24	49.7		809
1990	SP6		1990	09	25.22153	00	34	06.29	-01	57	26.6	18.0	809
1990	SP6		1990	09	25.23472	00	34	05.74	-01	57	35.2		809
1990	SP6		1990	09	25.24792	00	34	05.08	-01	57	43.2		809
1990	SQ6	*	1990	09	22.17153	00	36	46.92	-02	11	37.7	19.5	809
1990	SQ6		1990	09	22.18472	00	36	46.26	-02	11	43.9		809
1990	SQ6		1990	09	22.19792	00	36	45.58	-02	11	50.9		809
1990	SQ6		1990	09	25.22153	00	34	31.64	-02	36	47.8	19.3	809
1990	SQ6		1990	09	25.23472	00	34	31.01	-02	36	53.5		809
1990	SQ6		1990	09	25.24792	00	34	30.43	-02	36	57.9		809
1990	SR6	*	1990	09	22.17153	00	36	53.25	-00	00	21.1	18.0	809
1990	SR6		1990	09	22.18472	00	36	52.57	-00	00	25.2		809
1990	SR6		1990	09	22.19792	00	36	51.88	-00	00	28.2		809
1990	SR6		1990	09	25.22153	00	34	25.71	-00	15	05.5	18.0	809
1990	SR6		1990	09	25.23472	00	34	25.05	-00	15	09.5		809
1990	SR6		1990	09	25.24792	00	34	24.34	-00	15	12.7		809
1990	SS6	*	1990	09	22.17153	00	37	20.63	-00	58	56.5	17.6	809
1990	SS6		1990	09	22.18472	00	37	19.98	-00	59	03.5		809
1990	SS6		1990	09	22.19792	00	37	19.30	-00	59	09.9		809

1990	SS6	1990	09	25.22153	00	34	55.96	-01	24	01.2	17.7	809
1990	SS6	1990	09	25.23472	00	34	55.33	-01	24	07.3		809
1990	SS6	1990	09	25.24792	00	34	54.58	-01	24	14.4		809
1990	ST6	* 1990	09	22.17153	00	38	25.65	-03	31	46.4	18.8	809
1990	ST6	1990	09	22.18472	00	38	25.06	-03	31	51.7		809
1990	ST6	1990	09	22.19792	00	38	24.40	-03	31	55.2		809
1990	ST6	1990	09	25.22153	00	36	12.04	-03	47	57.5	18.7	809
1990	ST6	1990	09	25.23472	00	36	11.46	-03	48	02.1		809
1990	ST6	1990	09	25.24792	00	36	10.78	-03	48	06.4		809
1990	SU6	* 1990	09	22.17153	00	39	19.15	-02	25	43.5	18.7	809
1990	SU6	1990	09	22.18472	00	39	18.43	-02	25	49.0		809
1990	SU6	1990	09	22.19792	00	39	17.74	-02	25	54.2		809
1990	SU6	1990	09	25.22153	00	36	40.97	-02	45	03.5	18.6	809
1990	SU6	1990	09	25.23472	00	36	40.29	-02	45	09.1		809
1990	SU6	1990	09	25.24792	00	36	39.64	-02	45	12.8		809
1990	SV6	* 1990	09	22.17153	00	39	23.16	-01	48	37.6	18.4	809
1990	SV6	1990	09	22.18472	00	39	22.36	-01	48	37.3		809
1990	SV6	1990	09	22.19792	00	39	21.39	-01	48	36.5		809
1990	SV6	1990	09	25.22153	00	36	08.57	-01	46	14.8	18.2	809
1990	SV6	1990	09	25.23472	00	36	07.67	-01	46	14.0		809
1990	SV6	1990	09	25.24792	00	36	06.78	-01	46	12.9		809
1990	SW6	* 1990	09	22.17153	00	39	54.10	-03	36	18.1	18.7	809
1990	SW6	1990	09	22.18472	00	39	53.32	-03	36	18.1		809
1990	SW6	1990	09	22.19792	00	39	52.55	-03	36	18.8		809
1990	SW6	1990	09	25.22153	00	37	06.27	-03	35	58.4	18.4	809
1990	SW6	1990	09	25.23472	00	37	05.45	-03	35	58.1		809
1990	SW6	1990	09	25.24792	00	37	04.69	-03	35	58.1		809
1990	SX6	* 1990	09	22.17153	00	40	07.64	-04	21	59.4	19.3	809
1990	SX6	1990	09	22.18472	00	40	06.95	-04	22	05.6		809
1990	SX6	1990	09	22.19792	00	40	06.29	-04	22	09.0		809
1990	SX6	1990	09	25.22153	00	37	30.65	-04	39	46.7	18.7	809
1990	SX6	1990	09	25.23472	00	37	29.94	-04	39	52.3		809
1990	SX6	1990	09	25.24792	00	37	29.18	-04	39	56.4		809
1990	SY6	* 1990	09	22.17153	00	41	14.54	-00	35	02.7	19.5	809
1990	SY6	1990	09	22.18472	00	41	13.84	-00	35	04.0		809
1990	SY6	1990	09	22.19792	00	41	13.19	-00	35	04.9		809
1990	SY6	1990	09	25.22153	00	38	21.24	-00	39	26.3	18.8	809
1990	SY6	1990	09	25.23472	00	38	20.46	-00	39	26.6		809
1990	SY6	1990	09	25.24792	00	38	19.44	-00	39	28.9		809
1990	SZ6	* 1990	09	22.17153	00	41	18.37	-00	30	04.2	17.8	809
1990	SZ6	1990	09	22.18472	00	41	17.21	-00	30	02.1		809
1990	SZ6	1990	09	22.19792	00	41	16.01	-00	29	59.6		809
1990	SZ6	1990	09	25.22153	00	36	42.92	-00	19	56.8	17.7	809
1990	SZ6	1990	09	25.23472	00	36	41.78	-00	19	54.3		809
1990	SZ6	1990	09	25.24792	00	36	40.52	-00	19	50.6		809
1990	SA7	* 1990	09	22.17153	00	41	34.57	-03	53	11.9	19.8	809
1990	SA7	1990	09	22.18472	00	41	33.73	-03	53	16.4		809
1990	SA7	1990	09	22.19792	00	41	32.89	-03	53	19.8		809
1990	SA7	1990	09	25.22153	00	38	24.52	-04	05	11.1	20.0	809
1990	SA7	1990	09	25.23472	00	38	23.69	-04	05	13.1		809
1990	SA7	1990	09	25.24792	00	38	22.78	-04	05	17.0		809
1990	SB7	* 1990	09	22.17153	00	41	35.50	-03	53	37.8	20.3	809
1990	SB7	1990	09	22.18472	00	41	34.73	-03	53	40.2		809
1990	SB7	1990	09	22.19792	00	41	34.02	-03	53	41.0		809
1990	SB7	1990	09	25.22153	00	38	50.18	-03	58	28.0	20.2	809
1990	SB7	1990	09	25.23472	00	38	49.46	-03	58	28.4		809
1990	SB7	1990	09	25.24792	00	38	48.59	-03	58	30.2		809
1990	SC7	* 1990	09	22.17153	00	41	50.35	-04	00	24.8	18.6	809
1990	SC7	1990	09	22.18472	00	41	49.61	-04	00	26.6		809

1990	SC7	1990	09	22.19792	00	41	48.76	-04	00	28.8		809
1990	SC7	1990	09	25.22153	00	38	59.00	-04	07	59.9	18.7	809
1990	SC7	1990	09	25.23472	00	38	58.20	-04	08	02.1		809
1990	SC7	1990	09	25.24792	00	38	57.38	-04	08	03.7		809
1990	SD7	* 1990	09	22.17153	00	42	27.46	-03	38	34.5	19.4	809
1990	SD7	1990	09	22.18472	00	42	26.75	-03	38	41.5		809
1990	SD7	1990	09	22.19792	00	42	25.86	-03	38	46.4		809
1990	SD7	1990	09	25.22153	00	39	45.14	-03	59	49.0	18.8	809
1990	SD7	1990	09	25.23472	00	39	44.33	-03	59	55.8		809
1990	SD7	1990	09	25.24792	00	39	43.54	-03	59	59.9		809
1990	SE7	* 1990	09	22.17153	00	42	37.45	-00	55	20.7	19.0	809
1990	SE7	1990	09	22.18472	00	42	36.82	-00	55	25.2		809
1990	SE7	1990	09	22.19792	00	42	36.16	-00	55	29.6		809
1990	SE7	1990	09	25.22153	00	40	19.87	-01	11	25.1	18.8	809
1990	SE7	1990	09	25.23472	00	40	19.20	-01	11	29.7		809
1990	SE7	1990	09	25.24792	00	40	18.55	-01	11	34.6		809
1990	SF7	* 1990	09	22.17153	00	43	49.79	-01	39	25.5	19.6	809
1990	SF7	1990	09	22.18472	00	43	49.13	-01	39	27.4		809
1990	SF7	1990	09	22.19792	00	43	48.55	-01	39	29.6		809
1990	SF7	1990	09	25.22153	00	41	19.10	-01	47	33.8	19.0	809
1990	SF7	1990	09	25.23472	00	41	18.41	-01	47	35.8		809
1990	SF7	1990	09	25.24792	00	41	17.74	-01	47	37.2		809
1990	SG7	* 1990	09	22.17153	00	44	40.84	-02	07	50.8	19.2	809
1990	SG7	1990	09	22.18472	00	44	39.97	-02	07	51.0		809
1990	SG7	1990	09	22.19792	00	44	39.11	-02	07	51.1		809
1990	SG7	1990	09	25.22153	00	41	27.23	-02	09	06.8	18.8	809
1990	SG7	1990	09	25.23472	00	41	26.24	-02	09	06.4		809
1990	SG7	1990	09	25.24792	00	41	25.36	-02	09	08.0		809
1990	SH7	* 1990	09	22.12500	00	02	33.81	-05	03	16.8	18.8	809
1990	SH7	1990	09	22.13819	00	02	33.06	-05	03	21.6		809
1990	SH7	1990	09	22.15139	00	02	32.41	-05	03	26.4		809
1990	SH7	1990	09	25.17778	00	00	10.57	-05	18	37.7	19.0	809
1990	SH7	1990	09	25.19097	00	00	09.90	-05	18	41.3		809
1990	SH7	1990	09	25.20417	00	00	09.17	-05	18	45.1		809
1990	SJ7	* 1990	09	22.12500	00	02	47.49	-07	37	16.5	19.5	809
1990	SJ7	1990	09	22.13819	00	02	46.80	-07	37	26.0		809
1990	SJ7	1990	09	22.15139	00	02	46.12	-07	37	32.8		809
1990	SJ7	1990	09	25.17778	00	00	21.59	-08	05	00.0	19.4	809
1990	SJ7	1990	09	25.19097	00	00	20.96	-08	05	07.8		809
1990	SJ7	1990	09	25.20417	00	00	20.26	-08	05	14.9		809
1990	SK7	* 1990	09	22.12500	00	03	30.37	-06	22	40.0	19.5	809
1990	SK7	1990	09	22.13819	00	03	29.56	-06	22	45.3		809
1990	SK7	1990	09	22.15139	00	03	28.73	-06	22	51.3		809
1990	SK7	1990	09	25.17778	00	00	32.92	-06	40	55.4	19.3	809
1990	SK7	1990	09	25.19097	00	00	32.06	-06	41	01.1		809
1990	SK7	1990	09	25.20417	00	00	31.25	-06	41	04.3		809
1990	SL7	* 1990	09	22.12500	00	04	01.51	-05	43	40.2	18.4	809
1990	SL7	1990	09	22.13819	00	04	00.75	-05	43	44.2		809
1990	SL7	1990	09	22.15139	00	03	59.97	-05	43	48.4		809
1990	SL7	1990	09	25.17778	00	01	15.61	-05	58	07.9	18.6	809
1990	SL7	1990	09	25.19097	00	01	14.80	-05	58	11.1		809
1990	SL7	1990	09	25.20417	00	01	14.04	-05	58	14.7		809
1990	SM7	* 1990	09	22.12500	00	04	34.97	-07	52	26.7	19.3	809
1990	SM7	1990	09	22.13819	00	04	34.05	-07	52	31.8		809
1990	SM7	1990	09	22.15139	00	04	33.32	-07	52	33.8		809
1990	SM7	1990	09	25.17778	00	01	23.62	-08	06	01.0	19.1	809
1990	SM7	1990	09	25.19097	00	01	22.71	-08	06	04.9		809
1990	SM7	1990	09	25.20417	00	01	21.89	-08	06	07.9		809
1990	SN7	* 1990	09	22.12500	00	04	35.96	-07	34	03.2	18.0	809

1990	SN7	1990	09	22.13819	00	04	35.14	-07	34	05.5		809
1990	SN7	1990	09	22.15139	00	04	34.30	-07	34	07.8		809
1990	SN7	1990	09	25.17778	00	01	40.29	-07	40	49.7	17.8	809
1990	SN7	1990	09	25.19097	00	01	39.49	-07	40	51.6		809
1990	SN7	1990	09	25.20417	00	01	38.63	-07	40	53.2		809
1990	SO7	* 1990	09	22.12500	00	05	00.36	-05	23	01.8	19.2	809
1990	SO7	1990	09	22.13819	00	04	59.72	-05	23	09.1		809
1990	SO7	1990	09	22.15139	00	04	59.18	-05	23	16.4		809
1990	SO7	1990	09	25.17778	00	02	47.69	-05	47	58.1	19.5	809
1990	SO7	1990	09	25.19097	00	02	47.08	-05	48	05.6		809
1990	SO7	1990	09	25.20417	00	02	46.49	-05	48	11.5		809
1990	SP7	* 1990	09	22.12500	00	05	19.87	-04	05	53.8	18.6	809
1990	SP7	1990	09	22.13819	00	05	19.16	-04	05	58.6		809
1990	SP7	1990	09	22.15139	00	05	18.49	-04	06	02.3		809
1990	SP7	1990	09	25.17778	00	02	50.58	-04	20	20.9	18.4	809
1990	SP7	1990	09	25.19097	00	02	49.89	-04	20	24.8		809
1990	SP7	1990	09	25.20417	00	02	49.18	-04	20	28.9		809
1990	SQ7	* 1990	09	22.12500	00	05	26.95	-06	12	10.0	19.0	809
1990	SQ7	1990	09	22.13819	00	05	26.06	-06	12	16.4		809
1990	SQ7	1990	09	22.15139	00	05	25.34	-06	12	20.7		809
1990	SQ7	1990	09	25.17778	00	02	39.58	-06	29	10.0	18.7	809
1990	SQ7	1990	09	25.19097	00	02	38.77	-06	29	14.5		809
1990	SQ7	1990	09	25.20417	00	02	38.02	-06	29	18.5		809
1990	SR7	* 1990	09	22.12500	00	05	49.84	-08	10	59.1	19.4	809
1990	SR7	1990	09	22.13819	00	05	48.94	-08	11	03.0		809
1990	SR7	1990	09	22.15139	00	05	48.15	-08	11	06.4		809
1990	SR7	1990	09	25.17778	00	02	50.68	-08	20	37.9	18.6	809
1990	SR7	1990	09	25.19097	00	02	49.91	-08	20	40.6		809
1990	SR7	1990	09	25.20417	00	02	49.04	-08	20	42.7		809
1990	SS7	* 1990	09	22.12500	00	06	09.25	-04	53	33.4	18.8	809
1990	SS7	1990	09	22.13819	00	06	08.65	-04	53	37.5		809
1990	SS7	1990	09	22.15139	00	06	07.98	-04	53	42.0		809
1990	SS7	1990	09	25.17778	00	03	45.64	-05	08	56.0	18.8	809
1990	SS7	1990	09	25.19097	00	03	45.02	-05	08	59.9		809
1990	SS7	1990	09	25.20417	00	03	44.34	-05	09	03.4		809
1990	ST7	* 1990	09	22.12500	00	06	31.57	-05	55	38.5	18.9	809
1990	ST7	1990	09	22.13819	00	06	30.85	-05	55	43.3		809
1990	ST7	1990	09	22.15139	00	06	30.07	-05	55	46.3		809
1990	ST7	1990	09	25.17778	00	03	50.71	-06	09	24.4	18.5	809
1990	ST7	1990	09	25.19097	00	03	49.95	-06	09	27.6		809
1990	ST7	1990	09	25.20417	00	03	49.19	-06	09	31.8		809
1990	SU7	* 1990	09	22.12500	00	06	56.80	-04	23	17.6	19.0	809
1990	SU7	1990	09	22.13819	00	06	56.05	-04	23	21.3		809
1990	SU7	1990	09	22.15139	00	06	55.43	-04	23	25.5		809
1990	SU7	1990	09	25.17778	00	04	18.06	-04	37	16.1	19.2	809
1990	SU7	1990	09	25.19097	00	04	17.31	-04	37	19.6		809
1990	SU7	1990	09	25.20417	00	04	16.53	-04	37	23.0		809
1990	SV7	* 1990	09	22.12500	00	07	05.99	-07	05	30.2	18.1	809
1990	SV7	1990	09	22.13819	00	07	05.17	-07	05	32.2		809
1990	SV7	1990	09	22.15139	00	07	04.32	-07	05	33.2		809
1990	SV7	1990	09	25.17778	00	04	01.84	-07	09	25.7	18.2	809
1990	SV7	1990	09	25.19097	00	04	00.99	-07	09	26.6		809
1990	SV7	1990	09	25.20417	00	04	00.11	-07	09	27.3		809
1990	SW7	* 1990	09	22.12500	00	07	25.79	-05	55	21.0	18.4	809
1990	SW7	1990	09	22.13819	00	07	25.17	-05	55	29.5		809
1990	SW7	1990	09	22.15139	00	07	24.54	-05	55	36.3		809
1990	SW7	1990	09	25.17778	00	05	12.63	-06	23	18.5	18.3	809
1990	SW7	1990	09	25.19097	00	05	12.00	-06	23	26.0		809
1990	SW7	1990	09	25.20417	00	05	11.38	-06	23	33.3		809

1990	SX7	*	1990	09	22.12500	00	07	32.66	-06	41	18.1	18.8	809
1990	SX7		1990	09	22.13819	00	07	31.94	-06	41	25.3		809
1990	SX7		1990	09	22.15139	00	07	31.12	-06	41	32.8		809
1990	SX7		1990	09	25.17778	00	04	48.73	-07	05	54.7	18.7	809
1990	SX7		1990	09	25.19097	00	04	48.00	-07	06	00.7		809
1990	SX7		1990	09	25.20417	00	04	47.19	-07	06	06.7		809
1990	SY7	*	1990	09	22.12500	00	07	42.53	-07	11	41.2	19.0	809
1990	SY7		1990	09	22.13819	00	07	41.59	-07	11	46.8		809
1990	SY7		1990	09	22.15139	00	07	40.83	-07	11	50.3		809
1990	SY7		1990	09	25.17778	00	04	39.89	-07	25	32.5	19.2	809
1990	SY7		1990	09	25.19097	00	04	39.00	-07	25	35.8		809
1990	SY7		1990	09	25.20417	00	04	38.23	-07	25	39.8		809
1990	SZ7	*	1990	09	22.12500	00	08	18.05	-07	10	18.4	18.6	809
1990	SZ7		1990	09	22.13819	00	08	17.20	-07	10	21.8		809
1990	SZ7		1990	09	22.15139	00	08	16.37	-07	10	25.4		809
1990	SZ7		1990	09	25.17778	00	05	06.72	-07	23	25.9	18.5	809
1990	SZ7		1990	09	25.19097	00	05	05.86	-07	23	29.0		809
1990	SZ7		1990	09	25.20417	00	05	04.99	-07	23	32.6		809
1990	SA8	*	1990	09	22.12500	00	08	30.43	-05	08	06.2	18.9	809
1990	SA8		1990	09	22.13819	00	08	29.62	-05	08	11.3		809
1990	SA8		1990	09	22.15139	00	08	28.90	-05	08	15.3		809
1990	SA8		1990	09	25.17778	00	05	42.93	-05	27	30.9	18.8	809
1990	SA8		1990	09	25.19097	00	05	42.23	-05	27	35.3		809
1990	SA8		1990	09	25.20417	00	05	41.36	-05	27	42.2		809
1990	SB8	*	1990	09	22.12500	00	09	18.62	-06	59	25.6	19.3	809
1990	SB8		1990	09	22.13819	00	09	17.96	-06	59	30.7		809
1990	SB8		1990	09	22.15139	00	09	17.31	-06	59	35.1		809
1990	SB8		1990	09	25.17778	00	06	52.37	-07	12	01.5	20.5	809
1990	SB8		1990	09	25.19097	00	06	51.69	-07	12	03.4		809
1990	SB8		1990	09	25.20417	00	06	50.81	-07	12	09.2		809
1990	SC8	*	1990	09	22.12500	00	09	55.14	-07	16	23.4	18.9	809
1990	SC8		1990	09	22.13819	00	09	54.64	-07	16	30.1		809
1990	SC8		1990	09	22.15139	00	09	53.99	-07	16	38.9		809
1990	SC8		1990	09	25.17778	00	07	41.68	-07	44	42.0	18.5	809
1990	SC8		1990	09	25.19097	00	07	41.00	-07	44	49.3		809
1990	SC8		1990	09	25.20417	00	07	40.32	-07	44	55.8		809
1990	SD8	*	1990	09	22.12500	00	09	59.49	-06	31	21.3	19.2	809
1990	SD8		1990	09	22.13819	00	09	58.91	-06	31	26.5		809
1990	SD8		1990	09	22.15139	00	09	58.34	-06	31	31.3		809
1990	SD8		1990	09	25.17778	00	07	46.35	-06	48	38.3	19.6	809
1990	SD8		1990	09	25.19097	00	07	45.72	-06	48	42.4		809
1990	SD8		1990	09	25.20417	00	07	45.16	-06	48	47.0		809
1990	SE8	*	1990	09	22.12500	00	10	16.92	-03	43	50.2	19.3	809
1990	SE8		1990	09	22.13819	00	10	16.24	-03	43	55.9		809
1990	SE8		1990	09	22.15139	00	10	15.65	-03	44	02.0		809
1990	SE8		1990	09	25.17778	00	07	55.40	-04	04	17.8	19.2	809
1990	SE8		1990	09	25.19097	00	07	54.80	-04	04	22.8		809
1990	SE8		1990	09	25.20417	00	07	54.19	-04	04	27.9		809
1990	SF8	*	1990	09	22.12500	00	10	17.50	-05	55	39.2	18.8	809
1990	SF8		1990	09	22.13819	00	10	16.65	-05	55	42.1		809
1990	SF8		1990	09	22.15139	00	10	15.92	-05	55	44.0		809
1990	SF8		1990	09	25.17778	00	07	11.44	-06	03	47.4	18.6	809
1990	SF8		1990	09	25.19097	00	07	10.56	-06	03	49.6		809
1990	SF8		1990	09	25.20417	00	07	09.68	-06	03	51.1		809
1990	SG8	*	1990	09	22.12500	00	10	22.06	-05	14	10.9	18.2	809
1990	SG8		1990	09	22.13819	00	10	21.29	-05	14	15.6		809
1990	SG8		1990	09	22.15139	00	10	20.47	-05	14	20.5		809
1990	SG8		1990	09	25.17778	00	07	27.16	-05	33	34.8	18.3	809
1990	SG8		1990	09	25.19097	00	07	26.34	-05	33	39.5		809

1990	SG8		1990	09	25.20417	00	07	25.53	-05	33	45.1		809
1990	SH8	*	1990	09	22.12500	00	10	32.66	-06	54	03.5	18.6	809
1990	SH8		1990	09	22.13819	00	10	31.86	-06	54	11.3		809
1990	SH8		1990	09	22.15139	00	10	31.08	-06	54	18.6		809
1990	SH8		1990	09	25.17778	00	07	44.74	-07	20	26.3	18.7	809
1990	SH8		1990	09	25.19097	00	07	43.93	-07	20	33.3		809
1990	SH8		1990	09	25.20417	00	07	43.20	-07	20	40.0		809
1990	SJ8	*	1990	09	22.12500	00	11	07.84	-04	07	54.8	19.0	809
1990	SJ8		1990	09	22.13819	00	11	07.39	-04	07	58.8		809
1990	SJ8		1990	09	22.15139	00	11	06.73	-04	08	05.2		809
1990	SJ8		1990	09	25.17778	00	08	54.45	-04	25	14.3	18.9	809
1990	SJ8		1990	09	25.19097	00	08	53.83	-04	25	19.1		809
1990	SJ8		1990	09	25.20417	00	08	53.14	-04	25	23.0		809
1990	SK8	*	1990	09	22.12500	00	11	11.16	-07	31	13.9	18.5	809
1990	SK8		1990	09	22.13819	00	11	10.42	-07	31	19.6		809
1990	SK8		1990	09	22.15139	00	11	09.81	-07	31	24.5		809
1990	SK8		1990	09	25.17778	00	08	43.61	-07	50	46.6	18.6	809
1990	SK8		1990	09	25.19097	00	08	42.90	-07	50	51.6		809
1990	SK8		1990	09	25.20417	00	08	42.20	-07	50	57.2		809
1990	SL8	*	1990	09	22.12500	00	11	55.97	-08	04	47.8	19.0	809
1990	SL8		1990	09	22.13819	00	11	55.13	-08	04	48.5		809
1990	SL8		1990	09	22.15139	00	11	54.38	-08	04	50.1		809
1990	SL8		1990	09	25.17778	00	09	01.96	-08	06	31.7	18.7	809
1990	SL8		1990	09	25.19097	00	09	01.11	-08	06	32.5		809
1990	SL8		1990	09	25.20417	00	09	00.24	-08	06	32.8		809
1990	SM8	*	1990	09	22.12500	00	12	56.51	-06	08	27.3	19.4	809
1990	SM8		1990	09	22.13819	00	12	55.80	-06	08	31.3		809
1990	SM8		1990	09	22.15139	00	12	55.10	-06	08	34.9		809
1990	SM8		1990	09	25.17778	00	10	16.41	-06	21	36.7	19.1	809
1990	SM8		1990	09	25.19097	00	10	15.59	-06	21	39.4		809
1990	SM8		1990	09	25.20417	00	10	14.79	-06	21	43.0		809
1990	SN8	*	1990	09	22.12500	00	13	04.15	-04	40	57.5	18.7	809
1990	SN8		1990	09	22.13819	00	13	03.50	-04	41	01.0		809
1990	SN8		1990	09	22.15139	00	13	02.74	-04	41	05.3		809
1990	SN8		1990	09	25.17778	00	10	26.16	-04	55	32.8	18.6	809
1990	SN8		1990	09	25.19097	00	10	25.41	-04	55	35.7		809
1990	SN8		1990	09	25.20417	00	10	24.73	-04	55	39.9		809
1990	SO8	*	1990	09	22.12500	00	13	48.53	-06	19	42.2	18.7	809
1990	SO8		1990	09	22.13819	00	13	47.95	-06	19	48.4		809
1990	SO8		1990	09	22.15139	00	13	47.42	-06	19	54.3		809
1990	SO8		1990	09	25.17778	00	11	30.27	-06	42	01.9	18.7	809
1990	SO8		1990	09	25.19097	00	11	29.67	-06	42	07.1		809
1990	SO8		1990	09	25.20417	00	11	28.99	-06	42	13.2		809
1990	SP8	*	1990	09	22.12500	00	14	03.69	-06	45	14.2	18.8	809
1990	SP8		1990	09	22.13819	00	14	03.16	-06	45	20.5		809
1990	SP8		1990	09	22.15139	00	14	02.65	-06	45	25.5		809
1990	SP8		1990	09	25.17778	00	11	56.25	-07	06	41.5	18.7	809
1990	SP8		1990	09	25.19097	00	11	55.67	-07	06	47.7		809
1990	SP8		1990	09	25.20417	00	11	55.07	-07	06	52.8		809
1990	SQ8	*	1990	09	22.12500	00	14	06.90	-08	30	09.6	18.8	809
1990	SQ8		1990	09	22.13819	00	14	06.21	-08	30	16.3		809
1990	SQ8		1990	09	22.15139	00	14	05.54	-08	30	22.1		809
1990	SQ8		1990	09	25.17778	00	11	38.04	-08	53	34.8	18.6	809
1990	SQ8		1990	09	25.19097	00	11	37.37	-08	53	41.5		809
1990	SQ8		1990	09	25.20417	00	11	36.62	-08	53	47.1		809
1990	SR8	*	1990	09	22.12500	00	14	14.28	-08	06	45.9	19.7	809
1990	SR8		1990	09	22.13819	00	14	13.42	-08	06	52.6		809
1990	SR8		1990	09	22.15139	00	14	12.71	-08	06	58.4		809
1990	SR8		1990	09	25.17778	00	11	13.54	-08	24	42.6	19.6	809

1990 SR8	1990 09 25.19097	00 11 12.63	-08 24 47.5	809
1990 SR8	1990 09 25.20417	00 11 11.87	-08 24 51.8	809
1990 SS8 *	1990 09 22.12500	00 14 15.66	-03 50 28.8	18.7 809
1990 SS8	1990 09 22.13819	00 14 15.07	-03 50 35.5	809
1990 SS8	1990 09 22.15139	00 14 14.55	-03 50 42.4	809
1990 SS8	1990 09 25.17778	00 12 08.34	-04 16 29.1	18.5 809
1990 SS8	1990 09 25.19097	00 12 07.77	-04 16 34.7	809
1990 SS8	1990 09 25.20417	00 12 07.17	-04 16 41.7	809
1990 ST8 *	1990 09 22.12500	00 14 41.74	-04 37 58.0	18.3 809
1990 ST8	1990 09 22.13819	00 14 40.96	-04 38 01.0	809
1990 ST8	1990 09 22.15139	00 14 40.16	-04 38 04.4	809
1990 ST8	1990 09 25.17778	00 11 53.05	-04 49 14.1	18.3 809
1990 ST8	1990 09 25.19097	00 11 52.30	-04 49 16.2	809
1990 ST8	1990 09 25.20417	00 11 51.51	-04 49 19.3	809
1990 SU8 *	1990 09 22.12500	00 15 04.41	-04 47 30.9	17.7 809
1990 SU8	1990 09 22.13819	00 15 03.69	-04 47 39.5	809
1990 SU8	1990 09 22.15139	00 15 02.99	-04 47 47.6	809
1990 SU8	1990 09 25.17778	00 12 25.64	-05 18 44.6	17.8 809
1990 SU8	1990 09 25.19097	00 12 24.94	-05 18 53.1	809
1990 SU8	1990 09 25.20417	00 12 24.18	-05 19 01.1	809
1990 SV8 *	1990 09 22.12500	00 15 48.27	-05 07 29.2	19.5 809
1990 SV8	1990 09 22.13819	00 15 47.68	-05 07 34.2	809
1990 SV8	1990 09 22.15139	00 15 47.10	-05 07 40.0	809
1990 SV8	1990 09 25.17778	00 13 14.52	-05 26 15.7	19.4 809
1990 SV8	1990 09 25.19097	00 13 13.85	-05 26 20.5	809
1990 SV8	1990 09 25.20417	00 13 13.03	-05 26 25.9	809
1990 SW8 *	1990 09 22.12500	00 16 32.91	-06 00 20.6	18.3 809
1990 SW8	1990 09 22.13819	00 16 32.42	-06 00 28.3	809
1990 SW8	1990 09 22.15139	00 16 31.89	-06 00 37.4	809
1990 SW8	1990 09 25.17778	00 14 27.75	-06 32 35.7	18.5 809
1990 SW8	1990 09 25.19097	00 14 27.20	-06 32 44.0	809
1990 SW8	1990 09 25.20417	00 14 26.66	-06 32 52.1	809
1990 SX8 *	1990 09 22.12500	00 16 39.77	-04 54 36.9	18.2 809
1990 SX8	1990 09 22.13819	00 16 39.22	-04 54 45.9	809
1990 SX8	1990 09 22.15139	00 16 38.67	-04 54 54.4	809
1990 SX8	1990 09 25.17778	00 14 29.71	-05 28 50.9	18.5 809
1990 SX8	1990 09 25.19097	00 14 29.17	-05 28 58.5	809
1990 SX8	1990 09 25.20417	00 14 28.54	-05 29 07.7	809
1990 SY8 *	1990 09 22.12500	00 17 01.33	-05 31 43.8	18.5 809
1990 SY8	1990 09 22.13819	00 17 00.50	-05 31 46.9	809
1990 SY8	1990 09 22.15139	00 16 59.74	-05 31 51.4	809
1990 SY8	1990 09 25.17778	00 13 59.69	-05 45 04.8	18.7 809
1990 SY8	1990 09 25.19097	00 13 58.91	-05 45 08.2	809
1990 SY8	1990 09 25.20417	00 13 58.08	-05 45 11.8	809
1990 SZ8 *	1990 09 22.12500	00 17 27.84	-05 57 41.8	19.0 809
1990 SZ8	1990 09 22.13819	00 17 27.19	-05 57 44.6	809
1990 SZ8	1990 09 22.15139	00 17 26.48	-05 57 46.7	809
1990 SZ8	1990 09 25.17778	00 14 49.07	-06 05 01.3	19.2 809
1990 SZ8	1990 09 25.19097	00 14 48.38	-06 05 03.3	809
1990 SZ8	1990 09 25.20417	00 14 47.65	-06 05 04.8	809
1990 SA9 *	1990 09 22.12500	00 17 36.75	-07 08 39.9	20.0 809
1990 SA9	1990 09 22.13819	00 17 36.13	-07 08 43.4	809
1990 SA9	1990 09 22.15139	00 17 35.50	-07 08 48.0	809
1990 SA9	1990 09 25.17778	00 15 18.75	-07 20 34.3	20.0 809
1990 SA9	1990 09 25.19097	00 15 18.06	-07 20 38.3	809
1990 SA9	1990 09 25.20417	00 15 17.45	-07 20 41.5	809
1990 SB9 *	1990 09 22.12500	00 18 05.74	-06 25 44.0	18.7 809
1990 SB9	1990 09 22.13819	00 18 05.00	-06 25 48.9	809
1990 SB9	1990 09 22.15139	00 18 04.30	-06 25 53.3	809

1990	SB9	1990	09	25.17778	00	15	27.50	-06	43	25.2	18.8	809
1990	SB9	1990	09	25.19097	00	15	26.71	-06	43	30.5		809
1990	SB9	1990	09	25.20417	00	15	25.98	-06	43	35.6		809
1990	SC9	* 1990	09	22.12500	00	18	14.75	-05	58	51.7	18.8	809
1990	SC9	1990	09	22.13819	00	18	13.95	-05	58	55.4		809
1990	SC9	1990	09	22.15139	00	18	13.23	-05	58	57.3		809
1990	SC9	1990	09	25.17778	00	15	19.48	-06	09	31.8	19.3	809
1990	SC9	1990	09	25.19097	00	15	18.66	-06	09	34.9		809
1990	SC9	1990	09	25.20417	00	15	17.88	-06	09	36.6		809
1990	SD9	* 1990	09	22.12500	00	18	19.72	-05	30	34.3	20.0	809
1990	SD9	1990	09	22.13819	00	18	19.09	-05	30	34.0		809
1990	SD9	1990	09	22.15139	00	18	18.36	-05	30	34.1		809
1990	SD9	1990	09	25.17778	00	15	33.67	-05	34	08.8	19.6	809
1990	SD9	1990	09	25.19097	00	15	32.94	-05	34	10.4		809
1990	SD9	1990	09	25.20417	00	15	32.08	-05	34	12.3		809
1990	SE9	* 1990	09	22.12500	00	18	24.80	-07	09	39.7	19.0	809
1990	SE9	1990	09	22.13819	00	18	24.07	-07	09	42.8		809
1990	SE9	1990	09	22.15139	00	18	23.33	-07	09	46.2		809
1990	SE9	1990	09	25.17778	00	15	44.47	-07	21	48.1	19.5	809
1990	SE9	1990	09	25.19097	00	15	43.73	-07	21	51.4		809
1990	SE9	1990	09	25.20417	00	15	42.98	-07	21	55.2		809
1990	SF9	* 1990	09	22.12500	00	00	15.55	-05	46	23.9	18.0	809
1990	SF9	1990	09	22.13819	00	00	14.83	-05	46	26.5		809
1990	SF9	1990	09	22.15139	00	00	14.19	-05	46	29.1		809
1990	SF9	1990	09	25.17778	23	57	48.69	-05	55	26.5	18.0	809
1990	SF9	1990	09	25.19097	23	57	48.05	-05	55	29.0		809
1990	SF9	1990	09	25.20417	23	57	47.30	-05	55	31.4		809
1990	SG9	* 1990	09	22.12500	00	00	18.75	-05	19	37.3	19.2	809
1990	SG9	1990	09	22.13819	00	00	18.05	-05	19	42.7		809
1990	SG9	1990	09	22.15139	00	00	17.40	-05	19	47.3		809
1990	SG9	1990	09	25.17778	23	57	57.18	-05	35	52.0	19.5	809
1990	SG9	1990	09	25.19097	23	57	56.57	-05	35	55.4		809
1990	SG9	1990	09	25.20417	23	57	55.88	-05	36	00.6		809
1990	SH9	* 1990	09	22.12500	00	00	30.61	-06	51	21.3	18.7	809
1990	SH9	1990	09	22.13819	00	00	29.85	-06	51	21.9		809
1990	SH9	1990	09	22.15139	00	00	29.14	-06	51	22.2		809
1990	SH9	1990	09	25.17778	23	57	42.85	-06	52	51.8	18.8	809
1990	SH9	1990	09	25.19097	23	57	42.08	-06	52	51.9		809
1990	SH9	1990	09	25.20417	23	57	41.32	-06	52	52.5		809
1990	SJ9	* 1990	09	22.12500	00	01	04.60	-06	57	37.6	18.5	809
1990	SJ9	1990	09	22.13819	00	01	03.83	-06	57	38.4		809
1990	SJ9	1990	09	22.15139	00	01	03.10	-06	57	38.4		809
1990	SJ9	1990	09	25.17778	23	58	24.00	-06	58	55.2	18.4	809
1990	SJ9	1990	09	25.19097	23	58	23.31	-06	58	55.0		809
1990	SJ9	1990	09	25.20417	23	58	22.53	-06	58	55.5		809
1990	SK9	* 1990	09	22.12500	00	01	14.99	-05	02	50.8	18.6	809
1990	SK9	1990	09	22.13819	00	01	14.12	-05	02	47.5		809
1990	SK9	1990	09	22.15139	00	01	13.13	-05	02	43.4		809
1990	SK9	1990	09	25.17778	23	58	07.30	-04	49	12.2	18.7	809
1990	SK9	1990	09	25.19097	23	58	06.42	-04	49	08.7		809
1990	SK9	1990	09	25.20417	23	58	05.54	-04	49	05.4		809
1990	SL9	* 1990	09	22.12500	00	01	15.68	-03	57	14.1	18.3	809
1990	SL9	1990	09	22.13819	00	01	15.08	-03	57	17.8		809
1990	SL9	1990	09	22.15139	00	01	14.47	-03	57	21.5		809
1990	SL9	1990	09	25.17778	23	58	59.91	-04	11	58.7	18.3	809
1990	SL9	1990	09	25.19097	23	58	59.33	-04	12	02.3		809
1990	SL9	1990	09	25.20417	23	58	58.68	-04	12	06.6		809
1990	SM9	* 1990	09	22.12500	00	01	41.95	-04	58	09.5	18.0	809
1990	SM9	1990	09	22.13819	00	01	41.30	-04	58	14.1		809

1990	SM9	1990	09	22.15139	00	01	40.61	-04	58	19.4		809
1990	SM9	1990	09	25.17778	23	59	19.27	-05	14	37.6	18.2	809
1990	SM9	1990	09	25.19097	23	59	18.66	-05	14	41.7		809
1990	SM9	1990	09	25.20417	23	59	17.93	-05	14	46.9		809
1990	SN9	* 1990	09	22.12500	00	01	43.36	-05	46	09.0	18.7	809
1990	SN9	1990	09	22.13819	00	01	42.40	-05	46	13.2		809
1990	SN9	1990	09	22.15139	00	01	41.56	-05	46	15.7		809
1990	SN9	1990	09	25.17778	23	58	26.95	-05	57	17.9	18.8	809
1990	SN9	1990	09	25.19097	23	58	26.11	-05	57	20.4		809
1990	SN9	1990	09	25.20417	23	58	25.30	-05	57	22.9		809
1990	SO9	* 1990	09	22.12500	00	01	49.21	-07	08	20.0	19.5	809
1990	SO9	1990	09	22.13819	00	01	48.54	-07	08	28.4		809
1990	SO9	1990	09	22.15139	00	01	47.94	-07	08	36.4		809
1990	SO9	1990	09	25.17778	23	59	36.00	-07	36	47.3	19.6	809
1990	SO9	1990	09	25.19097	23	59	35.41	-07	36	54.3		809
1990	SO9	1990	09	25.20417	23	59	34.76	-07	37	03.9		809
1990	SP9	* 1990	09	22.12500	00	01	55.05	-06	13	08.8	19.0	809
1990	SP9	1990	09	22.13819	00	01	54.33	-06	13	17.2		809
1990	SP9	1990	09	22.15139	00	01	53.61	-06	13	25.4		809
1990	SP9	1990	09	25.17778	23	59	18.11	-06	41	38.7	18.9	809
1990	SP9	1990	09	25.19097	23	59	17.36	-06	41	47.0		809
1990	SP9	1990	09	25.20417	23	59	16.65	-06	41	54.5		809
1990	SQ9	* 1990	09	22.12500	00	02	18.08	-05	02	21.3	18.7	809
1990	SQ9	1990	09	22.13819	00	02	17.45	-05	02	23.7		809
1990	SQ9	1990	09	22.15139	00	02	16.84	-05	02	27.4		809
1990	SQ9	1990	09	25.17778	23	59	58.93	-05	12	53.4	18.8	809
1990	SQ9	1990	09	25.19097	23	59	58.35	-05	12	56.3		809
1990	SQ9	1990	09	25.20417	23	59	57.78	-05	12	58.4		809
1990	SR9	* 1990	09	22.12500	00	02	28.13	-06	57	01.2	20.0	809
1990	SR9	1990	09	22.13819	00	02	27.19	-06	57	03.6		809
1990	SR9	1990	09	22.15139	00	02	26.48	-06	57	06.3		809
1990	SR9	1990	09	25.17778	23	59	24.55	-07	03	48.6	19.4	809
1990	SR9	1990	09	25.19097	23	59	23.56	-07	03	50.4		809
1990	SR9	1990	09	25.20417	23	59	22.78	-07	03	52.1		809
1990	SS9	* 1990	09	22.12500	00	02	39.29	-06	41	52.2	18.4	809
1990	SS9	1990	09	22.13819	00	02	38.50	-06	41	57.5		809
1990	SS9	1990	09	22.15139	00	02	37.74	-06	42	03.2		809
1990	SS9	1990	09	25.17778	23	59	53.19	-07	00	38.9	18.3	809
1990	SS9	1990	09	25.19097	23	59	52.40	-07	00	43.9		809
1990	SS9	1990	09	25.20417	23	59	51.61	-07	00	48.3		809
1990	ST9	* 1990	09	22.12500	00	02	47.20	-04	46	27.6	19.2	809
1990	ST9	1990	09	22.13819	00	02	46.32	-04	46	32.2		809
1990	ST9	1990	09	22.15139	00	02	45.47	-04	46	34.8		809
1990	ST9	1990	09	25.17778	23	59	59.74	-04	58	43.8	18.8	809
1990	ST9	1990	09	25.19097	23	59	59.02	-04	58	47.1		809
1990	ST9	1990	09	25.20417	23	59	58.22	-04	58	50.4		809
1990	SU9	* 1990	09	22.12500	00	03	02.33	-06	36	50.3	19.0	809
1990	SU9	1990	09	22.13819	00	03	01.52	-06	36	55.7		809
1990	SU9	1990	09	22.15139	00	03	00.70	-06	36	59.1		809
1990	SU9	1990	09	25.17778	23	59	58.78	-06	52	11.1	18.9	809
1990	SU9	1990	09	25.19097	23	59	58.00	-06	52	14.5		809
1990	SU9	1990	09	25.20417	23	59	57.15	-06	52	18.3		809
1990	SV9	* 1990	09	22.12500	23	59	42.93	-04	48	07.6	18.8	809
1990	SV9	1990	09	22.13819	23	59	42.16	-04	48	14.5		809
1990	SV9	1990	09	22.15139	23	59	41.45	-04	48	20.9		809
1990	SV9	1990	09	25.17778	23	57	00.48	-05	12	42.2	18.5	809
1990	SV9	1990	09	25.19097	23	56	59.76	-05	12	49.1		809
1990	SV9	1990	09	25.20417	23	56	58.99	-05	12	55.5		809
1990	SW9	* 1990	09	22.12500	23	59	50.60	-05	19	30.7	18.9	809

1990 SW9	1990 09	22.13819	23 59	49.73	-05 19	35.0		809
1990 SW9	1990 09	22.15139	23 59	48.82	-05 19	38.4		809
1990 SW9	1990 09	25.17778	23 56	43.89	-05 31	55.6	19.6	809
1990 SW9	1990 09	25.19097	23 56	43.04	-05 31	58.9		809
1990 SW9	1990 09	25.20417	23 56	42.28	-05 32	02.5		809
1990 UL1	1990 10	16.29792	03 19	55.85	+09 30	56.8		809
1990 UL1	1990 10	20.24444	03 17	38.62	+09 18	24.9	17.7	809
1990 UL1	1990 10	20.27083	03 17	37.48	+09 18	19.8		809
1990 UP1	1990 10	16.29792	03 13	24.11	+11 30	46.7		809
1990 UP1	1990 10	20.24444	03 10	30.23	+11 42	08.0	18.0	809
1990 UP1	1990 10	20.27083	03 10	28.84	+11 42	13.2		809
1990 UW2	1990 10	16.29792	03 07	44.30	+10 15	52.6		809
1990 UW2	1990 10	20.24444	03 05	03.73	+10 06	26.6	18.7	809
1990 UW2	1990 10	20.27083	03 05	02.60	+10 06	23.9		809
1990 UM3 *	1990 10	16.29792	03 03	07.56	+09 34	36.9	19.7	809
1990 UM3	1990 10	20.24444	02 59	57.35	+09 17	32.6	18.7	809
1990 UM3	1990 10	20.27083	02 59	56.05	+09 17	26.4		809
1990 UN3 *	1990 10	16.29792	03 04	12.46	+07 45	15.2	19.2	809
1990 UN3	1990 10	20.24444	03 02	09.53	+07 16	42.7	18.7	809
1990 UN3	1990 10	20.27083	03 02	08.43	+07 16	30.1		809
1990 UO3 *	1990 10	16.29792	03 06	50.77	+10 28	48.5		809
1990 UO3	1990 10	20.24444	03 05	49.33	+09 59	18.5	18.5	809
1990 UO3	1990 10	20.27083	03 05	48.25	+09 59	07.9		809
1990 UP3 *	1990 10	16.29792	03 07	05.42	+09 03	38.9		809
1990 UP3	1990 10	20.24444	03 03	48.90	+08 49	06.0	18.5	809
1990 UP3	1990 10	20.27083	03 03	47.49	+08 49	00.3		809
1990 UQ3 *	1990 10	16.29792	03 07	07.21	+10 31	39.6		809
1990 UQ3	1990 10	20.24444	03 04	19.11	+10 01	33.7	18.6	809
1990 UQ3	1990 10	20.27083	03 04	17.75	+10 01	20.0		809
1990 UR3 *	1990 10	16.29792	03 07	21.72	+08 25	07.7		809
1990 UR3	1990 10	20.24444	03 04	53.99	+08 06	31.8	18.7	809
1990 UR3	1990 10	20.27083	03 04	52.83	+08 06	23.7		809
1990 US3 *	1990 10	16.29792	03 07	44.27	+08 29	09.2		809
1990 US3	1990 10	20.24444	03 05	08.46	+08 19	24.1	18.7	809
1990 US3	1990 10	20.27083	03 05	07.28	+08 19	20.6		809
1990 UT3 *	1990 10	16.29792	03 08	30.76	+11 40	02.1		809
1990 UT3	1990 10	20.24444	03 05	31.66	+11 15	02.0	19.0	809
1990 UT3	1990 10	20.27083	03 05	30.55	+11 14	52.9		809
1990 UU3 *	1990 10	16.29792	03 09	14.62	+08 18	22.8		809
1990 UU3	1990 10	20.24444	03 06	26.56	+07 46	42.7	18.8	809
1990 UU3	1990 10	20.27083	03 06	25.33	+07 46	28.7		809
1990 UV3 *	1990 10	16.29792	03 09	27.71	+09 11	44.1	18.7	809
1990 UV3	1990 10	20.24444	03 05	59.40	+09 23	29.4	18.4	809
1990 UV3	1990 10	20.27083	03 05	57.91	+09 23	34.1		809
1990 UW3 *	1990 10	16.29792	03 10	10.04	+11 42	46.9		809
1990 UW3	1990 10	20.24444	03 07	41.27	+11 25	48.6	18.8	809
1990 UW3	1990 10	20.27083	03 07	40.12	+11 25	42.8		809
1990 UX3 *	1990 10	16.29792	03 11	45.97	+11 32	41.1		809
1990 UX3	1990 10	20.24444	03 08	55.69	+10 56	28.0	18.7	809
1990 UX3	1990 10	20.27083	03 08	54.48	+10 56	11.9		809
1990 UY3 *	1990 10	16.29792	03 12	29.75	+09 41	15.0		809
1990 UY3	1990 10	20.24444	03 09	42.20	+09 40	07.8	18.2	809
1990 UY3	1990 10	20.27083	03 09	40.97	+09 40	08.4		809
1990 UZ3 *	1990 10	16.29792	03 13	07.67	+07 55	24.7		809
1990 UZ3	1990 10	20.24444	03 10	31.04	+07 29	50.9	18.6	809
1990 UZ3	1990 10	20.27083	03 10	29.84	+07 29	40.9		809
1990 UA4 *	1990 10	16.29792	03 13	27.16	+09 01	16.5		809
1990 UA4	1990 10	20.24444	03 11	20.90	+08 19	37.8	18.5	809
1990 UA4	1990 10	20.27083	03 11	19.82	+08 19	21.0		809

1990 UB4 *	1990 10 16.29792	03 13 37.13	+08 41 00.0	18.6	809
1990 UB4	1990 10 20.24444	03 11 26.15	+08 07 51.6	18.7	809
1990 UB4	1990 10 20.27083	03 11 25.17	+08 07 39.6		809
1990 UC4 *	1990 10 16.29792	03 14 01.59	+09 19 25.8	20.0	809
1990 UC4	1990 10 20.24444	03 10 57.08	+08 43 12.0	19.0	809
1990 UC4	1990 10 20.27083	03 10 55.93	+08 43 00.3		809
1990 UD4 *	1990 10 16.29792	03 15 00.67	+08 13 16.4		809
1990 UD4	1990 10 20.24444	03 12 30.88	+07 43 44.1	18.5	809
1990 UD4	1990 10 20.27083	03 12 29.82	+07 43 33.0		809
1990 UE4 *	1990 10 16.29792	03 18 29.82	+08 40 30.9		809
1990 UE4	1990 10 20.24444	03 16 18.83	+08 24 26.1	18.7	809
1990 UE4	1990 10 20.27083	03 16 17.84	+08 24 19.8		809
1990 UF4 *	1990 10 16.29792	03 18 52.24	+11 10 10.6		809
1990 UF4	1990 10 20.24444	03 17 03.24	+10 35 56.4	18.5	809
1990 UF4	1990 10 20.27083	03 17 02.29	+10 35 42.3		809
1990 UG4 *	1990 10 16.29792	03 19 14.65	+08 51 02.0		809
1990 UG4	1990 10 20.24444	03 16 33.33	+08 17 58.5	18.8	809
1990 UG4	1990 10 20.27083	03 16 32.20	+08 17 44.6		809
1990 UH4 *	1990 10 16.29792	03 21 35.13	+08 35 10.5		809
1990 UH4	1990 10 20.24444	03 18 29.67	+08 52 58.4	18.6	809
1990 UH4	1990 10 20.27083	03 18 28.31	+08 53 05.4		809
1990 VS2	1990 11 15.21111	04 08 57.56	+11 16 59.7	18.3	809
1990 VS2	1990 11 17.23611	04 07 00.47	+11 11 42.6		809
1990 VL3	1990 11 15.27986	04 36 42.98	+11 42 07.1	17.3	809
1990 VL3	1990 11 17.28125	04 34 54.00	+11 45 30.0		809
1990 VM3	1990 11 15.27986	04 27 32.11	+10 15 26.3	17.8	809
1990 VM3	1990 11 17.28125	04 25 10.16	+10 34 30.9		809
1990 VK4 *	1990 11 15.21111	04 02 38.32	+10 28 16.5	19.0	809
1990 VK4	1990 11 17.23611	04 00 47.97	+10 22 56.1		809
1990 VL4 *	1990 11 15.21111	04 04 13.15	+09 48 30.0	18.8	809
1990 VL4	1990 11 17.23611	04 02 05.10	+09 44 35.4		809
1990 VM4 *	1990 11 15.21111	04 04 26.51	+08 51 59.9	19.7	809
1990 VM4	1990 11 17.23611	04 02 33.12	+08 41 33.5		809
1990 VN4 *	1990 11 15.21111	04 04 27.72	+10 08 22.2	18.6	809
1990 VN4	1990 11 17.23611	04 02 41.04	+09 54 55.3		809
1990 VO4 *	1990 11 15.21111	04 05 12.61	+09 35 46.4	20.0	809
1990 VO4	1990 11 17.23611	04 03 23.83	+09 32 34.6	19.6	809
1990 VP4 *	1990 11 15.21111	04 05 12.75	+11 18 31.3	19.3	809
1990 VP4	1990 11 17.23611	04 03 06.84	+11 12 31.6		809
1990 VQ4 *	1990 11 15.21111	04 05 12.82	+11 46 22.7	18.7	809
1990 VQ4	1990 11 17.23611	04 03 05.75	+11 43 42.1		809
1990 VR4 *	1990 11 15.21111	04 05 35.91	+10 03 12.9	19.6	809
1990 VR4	1990 11 17.23611	04 03 49.90	+10 04 26.2		809
1990 VS4 *	1990 11 15.21111	04 06 05.04	+10 02 31.0	18.5	809
1990 VS4	1990 11 17.23611	04 04 11.82	+09 45 52.5		809
1990 VT4 *	1990 11 15.21111	04 06 13.96	+10 25 31.1	19.5	809
1990 VT4	1990 11 17.23611	04 04 22.90	+10 20 50.6		809
1990 VU4 *	1990 11 15.21111	04 07 01.61	+11 14 09.4	19.6	809
1990 VU4	1990 11 17.23611	04 04 54.95	+11 10 50.8		809
1990 VV4 *	1990 11 15.21111	04 07 32.15	+11 07 11.4	19.7	809
1990 VV4	1990 11 17.23611	04 04 58.08	+11 03 27.8		809
1990 VW4 *	1990 11 15.21111	04 07 38.81	+10 31 36.0	17.9	809
1990 VW4	1990 11 17.23611	04 06 00.29	+10 10 50.6		809
1990 VX4 *	1990 11 15.21111	04 08 24.89	+09 31 44.2	17.2	809
1990 VX4	1990 11 17.23611	04 06 13.38	+09 46 43.7		809
1990 VY4 *	1990 11 15.21111	04 09 40.07	+12 10 51.0	19.1	809
1990 VY4	1990 11 17.23611	04 07 47.34	+12 09 58.7		809
1990 VZ4 *	1990 11 15.21111	04 10 39.09	+09 29 16.0	19.6	809
1990 VZ4	1990 11 17.23611	04 09 00.15	+09 20 04.1		809

1990 VA5 *	1990 11 15.21111	04 12 04.81	+11 52 58.3	19.6	809
1990 VA5	1990 11 17.23611	04 10 25.94	+11 43 03.6		809
1990 VB5 *	1990 11 15.21111	04 12 31.79	+08 40 53.5	18.3	809
1990 VB5	1990 11 17.23611	04 10 36.39	+08 43 31.3		809
1990 VC5 *	1990 11 15.21111	04 12 35.50	+10 38 39.3	19.5	809
1990 VC5	1990 11 17.23611	04 10 31.74	+10 29 47.6		809
1990 VD5 *	1990 11 15.21111	04 13 39.53	+08 02 19.9	18.3	809
1990 VD5	1990 11 17.23611	04 11 12.33	+07 23 28.4		809
1990 VE5 *	1990 11 15.21111	04 14 10.01	+09 50 08.9	20.0	809
1990 VE5	1990 11 17.23611	04 12 17.69	+09 44 24.2		809
1990 VF5 *	1990 11 15.21111	04 14 11.08	+11 18 00.2	19.6	809
1990 VF5	1990 11 17.23611	04 12 08.26	+11 10 31.6	19.5	809
1990 VG5 *	1990 11 15.21111	04 14 45.39	+10 52 25.2	19.5	809
1990 VG5	1990 11 17.23611	04 13 00.17	+10 49 31.5		809
1990 VH5 *	1990 11 15.21111	04 15 19.42	+10 32 23.0	19.2	809
1990 VH5	1990 11 17.23611	04 13 19.60	+10 32 55.0		809
1990 VJ5 *	1990 11 15.21111	04 15 32.08	+09 00 34.4	20.5	809
1990 VJ5	1990 11 17.23611	04 13 45.11	+08 55 03.5		809
1990 VK5 *	1990 11 15.21111	04 15 49.70	+09 49 46.2	19.5	809
1990 VK5	1990 11 17.23611	04 13 49.96	+09 44 24.3		809
1990 VL5 *	1990 11 15.21111	04 16 03.19	+08 19 41.3	18.2	809
1990 VL5	1990 11 17.23611	04 14 20.92	+08 17 46.6		809
1990 VM5 *	1990 11 15.21111	04 16 22.22	+09 22 50.7	19.7	809
1990 VM5	1990 11 17.23611	04 14 27.08	+09 26 29.8		809
1990 VN5 *	1990 11 15.21111	04 17 58.91	+10 08 05.7	18.0	809
1990 VN5	1990 11 15.27986	04 17 54.10	+10 08 19.4	18.6	809
1990 VN5	1990 11 17.23611	04 15 45.37	+10 14 57.4		809
1990 VN5	1990 11 17.28125	04 15 42.24	+10 15 04.5		809
1990 VO5 *	1990 11 15.21111	04 18 33.57	+08 11 35.7	19.7	809
1990 VO5	1990 11 17.23611	04 16 41.41	+08 10 55.3		809
1990 VP5 *	1990 11 15.21111	04 18 36.81	+09 37 44.7	19.5	809
1990 VP5	1990 11 17.23611	04 16 36.43	+09 34 12.4		809
1990 VQ5 *	1990 11 15.21111	04 19 07.19	+08 14 44.5	19.2	809
1990 VQ5	1990 11 15.27986	04 19 03.47	+08 14 35.2	19.8	809
1990 VQ5	1990 11 17.23611	04 17 17.77	+08 09 27.5		809
1990 VQ5	1990 11 17.28125	04 17 15.27	+08 09 20.3		809
1990 VR5 *	1990 11 15.21111	04 19 51.49	+11 06 12.3	18.2	809
1990 VR5	1990 11 15.27986	04 19 47.34	+11 06 18.7	18.4	809
1990 VR5	1990 11 17.23611	04 17 56.13	+11 09 39.5		809
1990 VR5	1990 11 17.28125	04 17 53.43	+11 09 43.2		809
1990 VS5 *	1990 11 15.21111	04 20 51.27	+10 20 22.4	17.8	809
1990 VS5	1990 11 15.27986	04 20 47.10	+10 20 26.6	17.8	809
1990 VS5	1990 11 17.23611	04 19 00.91	+10 22 19.6		809
1990 VS5	1990 11 17.28125	04 18 58.12	+10 22 21.6		809
1990 VT5 *	1990 11 15.21111	04 21 43.47	+10 32 05.3	19.4	809
1990 VT5	1990 11 15.27986	04 21 39.75	+10 31 22.1	18.8	809
1990 VT5	1990 11 17.23611	04 19 59.63	+10 10 16.2		809
1990 VT5	1990 11 17.28125	04 19 56.93	+10 09 46.1	18.8	809
1990 VU5 *	1990 11 15.21111	04 22 20.65	+09 21 54.8	19.2	809
1990 VU5	1990 11 15.27986	04 22 17.32	+09 21 36.8	19.4	809
1990 VU5	1990 11 17.23611	04 20 46.05	+09 13 09.4		809
1990 VU5	1990 11 17.28125	04 20 43.80	+09 12 56.6		809
1990 VV5 *	1990 11 15.27986	04 19 23.04	+10 48 35.0	19.6	809
1990 VV5	1990 11 17.28125	04 17 49.16	+10 37 26.2		809
1990 VW5 *	1990 11 15.27986	04 21 25.86	+12 08 14.0	18.4	809
1990 VW5	1990 11 17.28125	04 19 53.42	+12 02 45.9		809
1990 VX5 *	1990 11 15.27986	04 23 54.65	+08 50 45.6	19.2	809
1990 VX5	1990 11 17.28125	04 22 12.34	+08 40 33.1		809
1990 VY5 *	1990 11 15.27986	04 24 57.48	+10 07 30.0	18.7	809

1990 VY5		1990 11 17.28125	04 23 33.65	+10 07 43.1		809
1990 VZ5	*	1990 11 15.27986	04 25 11.54	+08 33 50.3	18.7	809
1990 VZ5		1990 11 17.28125	04 23 38.96	+08 30 36.1		809
1990 VA6	*	1990 11 15.27986	04 25 14.91	+11 50 34.2	19.0	809
1990 VA6		1990 11 17.28125	04 23 13.75	+11 49 41.4		809
1990 VB6	*	1990 11 15.27986	04 26 11.43	+08 27 53.5	18.6	809
1990 VB6		1990 11 17.28125	04 24 19.42	+08 22 48.6		809
1990 VC6	*	1990 11 15.27986	04 26 36.85	+10 12 09.3	18.7	809
1990 VC6		1990 11 17.28125	04 24 52.92	+10 00 44.1		809
1990 VD6	*	1990 11 15.27986	04 29 14.81	+08 24 30.5	18.7	809
1990 VD6		1990 11 17.28125	04 27 34.97	+08 17 15.1		809
1990 VE6	*	1990 11 15.27986	04 29 21.46	+11 14 50.5	18.8	809
1990 VE6		1990 11 17.28125	04 27 49.59	+11 03 28.9		809
1990 VF6	*	1990 11 15.27986	04 29 44.87	+10 17 17.9	19.3	809
1990 VF6		1990 11 17.28125	04 27 42.72	+10 17 20.9		809
1990 VG6	*	1990 11 15.27986	04 30 37.10	+08 57 08.2	18.5	809
1990 VG6		1990 11 17.28125	04 28 53.40	+08 48 05.1		809
1990 VH6	*	1990 11 15.27986	04 32 10.67	+08 07 15.9	18.7	809
1990 VH6		1990 11 17.28125	04 30 45.56	+07 56 01.8		809
1990 VJ6	*	1990 11 15.27986	04 32 46.90	+11 12 39.2	19.6	809
1990 VJ6		1990 11 17.28125	04 31 17.18	+11 00 20.1		809
1990 VK6	*	1990 11 15.27986	04 32 50.02	+07 56 23.8	18.7	809
1990 VK6		1990 11 17.28125	04 31 15.19	+07 45 32.3		809
1990 VL6	*	1990 11 15.27986	04 34 58.50	+09 45 00.1	18.5	809
1990 VL6		1990 11 17.28125	04 33 57.62	+09 37 50.6		809
1990 VM6	*	1990 11 15.27986	04 36 11.61	+09 05 41.1	18.6	809
1990 VM6		1990 11 17.28125	04 34 22.45	+08 49 05.9		809
1990 VN6	*	1990 11 15.27986	04 36 27.92	+10 22 56.6	19.0	809
1990 VN6		1990 11 17.28125	04 34 35.61	+10 16 28.2		809
1990 VO6	*	1990 11 15.27986	04 36 33.37	+09 58 01.9	19.7	809
1990 VO6		1990 11 17.28125	04 34 45.97	+09 52 03.4		809
1990 VP6	*	1990 11 15.27986	04 36 53.21	+08 55 39.3	18.6	809
1990 VP6		1990 11 17.28125	04 35 11.93	+08 41 28.1		809
1990 VQ6	*	1990 11 15.27986	04 37 47.87	+08 56 40.2	18.5	809
1990 VQ6		1990 11 17.28125	04 36 11.68	+08 54 25.5		809
1990 VR6	*	1990 11 15.27986	04 38 09.77	+10 12 56.6	18.7	809
1990 VR6		1990 11 17.28125	04 36 21.98	+10 07 38.3		809
1990 WO	*	1990 11 18.20625	03 33 31.08	+08 15 57.9	20.0	809
1990 WO		1990 11 20.13264	03 31 18.74	+08 02 17.6		809
1990 WP	*	1990 11 18.20625	03 34 09.93	+09 05 31.8	19.5	809
1990 WP		1990 11 20.13264	03 32 41.89	+08 50 53.6		809
1990 WQ	*	1990 11 18.20625	03 34 15.52	+08 49 59.7	18.7	809
1990 WQ		1990 11 20.13264	03 32 34.82	+09 01 05.2		809
1990 WR	*	1990 11 18.20625	03 34 21.44	+09 52 34.4	19.6	809
1990 WR		1990 11 20.13264	03 32 49.01	+09 45 25.8		809
1990 WS	*	1990 11 18.20625	03 34 26.84	+08 57 39.3	18.7	809
1990 WS		1990 11 20.13264	03 32 36.40	+08 47 35.5		809
1990 WT	*	1990 11 18.20625	03 36 01.51	+10 40 15.5	18.8	809
1990 WT		1990 11 20.13264	03 33 55.82	+10 45 50.0		809
1990 WU	*	1990 11 18.20625	03 36 36.14	+07 10 29.4	19.3	809
1990 WU		1990 11 20.13264	03 34 56.73	+06 59 15.7		809
1990 WV	*	1990 11 18.20625	03 37 46.71	+10 03 07.0	18.4	809
1990 WV		1990 11 20.13264	03 35 44.46	+10 02 50.5		809
1990 WW	*	1990 11 18.20625	03 37 46.79	+07 43 42.0	19.2	809
1990 WW		1990 11 20.13264	03 36 02.14	+07 40 01.3		809
1990 WX	*	1990 11 18.20625	03 38 13.24	+09 39 12.3	18.6	809
1990 WX		1990 11 20.13264	03 36 41.61	+09 30 48.4		809
1990 WY	*	1990 11 18.20625	03 38 40.22	+10 24 04.4	18.6	809
1990 WY		1990 11 20.13264	03 36 44.38	+10 15 20.0		809

1990	WZ	*	1990	11	18.20625	03	39	12.57	+09	11	54.9	18.4	809
1990	WZ		1990	11	20.13264	03	37	33.21	+09	01	29.5		809
1990	WA1	*	1990	11	18.20625	03	39	32.95	+06	53	04.2	18.6	809
1990	WA1		1990	11	20.13264	03	37	42.56	+06	52	33.5		809
1990	WB1	*	1990	11	18.20625	03	39	38.34	+07	09	08.3	19.4	809
1990	WB1		1990	11	20.13264	03	36	57.78	+07	10	56.3		809
1990	WC1	*	1990	11	18.20625	03	39	54.74	+06	35	26.2	19.3	809
1990	WC1		1990	11	20.13264	03	38	09.12	+06	23	58.9		809
1990	WD1	*	1990	11	18.20625	03	39	55.66	+09	00	46.5	18.9	809
1990	WD1		1990	11	20.13264	03	38	17.39	+09	00	08.7		809
1990	WE1	*	1990	11	18.20625	03	40	28.80	+09	28	52.0	18.5	809
1990	WE1		1990	11	20.13264	03	38	30.11	+09	34	50.9		809
1990	WF1	*	1990	11	18.20625	03	40	33.92	+09	54	24.4	19.5	809
1990	WF1		1990	11	20.13264	03	39	35.58	+09	41	00.5		809
1990	WG1	*	1990	11	18.20625	03	40	39.80	+10	24	17.4	18.5	809
1990	WG1		1990	11	20.13264	03	38	24.50	+10	33	57.8		809
1990	WH1	*	1990	11	18.20625	03	40	48.88	+09	35	09.5	18.6	809
1990	WH1		1990	11	20.13264	03	38	42.14	+09	30	19.7		809
1990	WJ1	*	1990	11	18.20625	03	40	55.11	+10	08	51.5	19.2	809
1990	WJ1		1990	11	20.13264	03	39	25.73	+10	00	55.0		809
1990	WK1	*	1990	11	18.20625	03	41	01.97	+08	25	39.4	19.5	809
1990	WK1		1990	11	20.13264	03	39	39.32	+08	15	09.1		809
1990	WL1	*	1990	11	18.20625	03	41	23.41	+09	11	12.5	18.2	809
1990	WL1		1990	11	20.13264	03	39	26.50	+09	02	41.3		809
1990	WM1	*	1990	11	18.20625	03	41	28.27	+08	20	11.9	18.4	809
1990	WM1		1990	11	20.13264	03	39	50.28	+08	15	21.4		809
1990	WN1	*	1990	11	18.20625	03	41	49.05	+10	04	24.9	18.8	809
1990	WN1		1990	11	20.13264	03	40	22.86	+09	53	00.5		809
1990	WO1	*	1990	11	18.20625	03	42	36.56	+11	09	49.4	18.5	809
1990	WO1		1990	11	20.13264	03	40	50.82	+10	59	38.7		809
1990	WP1	*	1990	11	18.20625	03	42	51.97	+07	18	14.5	18.8	809
1990	WP1		1990	11	20.13264	03	41	00.88	+07	18	51.7		809
1990	WQ1	*	1990	11	18.20625	03	42	56.30	+09	30	31.6	18.7	809
1990	WQ1		1990	11	20.13264	03	41	05.34	+09	13	41.1		809
1990	WR1	*	1990	11	18.20625	03	43	12.62	+08	05	13.5	18.4	809
1990	WR1		1990	11	20.13264	03	41	09.84	+08	01	44.0		809
1990	WS1	*	1990	11	18.20625	03	43	37.14	+09	45	47.0	18.6	809
1990	WS1		1990	11	20.13264	03	41	54.31	+09	32	36.7		809
1990	WT1	*	1990	11	18.20625	03	43	51.37	+06	59	21.8	18.7	809
1990	WT1		1990	11	20.13264	03	41	49.15	+06	59	13.7		809
1990	WU1	*	1990	11	18.20625	03	44	21.32	+07	35	49.4	18.5	809
1990	WU1		1990	11	20.13264	03	42	43.37	+07	25	25.4		809
1990	WV1	*	1990	11	18.20625	03	44	58.32	+10	43	48.9	19.6	809
1990	WV1		1990	11	20.13264	03	42	58.30	+10	38	19.0		809
1990	WW1	*	1990	11	18.20625	03	45	09.20	+07	32	45.9	18.0	809
1990	WW1		1990	11	20.13264	03	43	24.75	+07	26	31.6		809
1990	WX1	*	1990	11	18.20625	03	45	12.79	+08	30	54.8	19.0	809
1990	WX1		1990	11	20.13264	03	43	15.88	+08	24	37.9		809
1990	WY1	*	1990	11	18.20625	03	45	29.02	+07	07	15.6	18.8	809
1990	WY1		1990	11	20.13264	03	43	55.39	+06	45	49.9		809
1990	WZ1	*	1990	11	18.20625	03	46	15.74	+11	04	07.1	19.2	809
1990	WZ1		1990	11	20.13264	03	44	14.62	+10	56	53.6		809
1990	WA2	*	1990	11	18.20625	03	46	16.02	+06	43	34.8	19.5	809
1990	WA2		1990	11	20.13264	03	44	33.28	+06	27	28.4		809
1990	WB2	*	1990	11	18.20625	03	47	30.98	+09	57	31.4	18.3	809
1990	WB2		1990	11	20.13264	03	45	27.87	+09	53	52.5		809
1990	WC2	*	1990	11	18.20625	03	49	02.54	+07	18	56.4	19.3	809
1990	WC2		1990	11	20.13264	03	47	28.44	+07	08	45.4		809
1990	WD2	*	1990	11	18.20625	03	49	31.97	+10	43	08.0	18.6	809

1990	WD2	1990	11	20.13264	03	47	33.30	+10	41	21.0		809	
1990	WE2	*	1990	11	18.20625	03	50	19.93	+08	12	39.6	18.7	809
1990	WE2		1990	11	20.13264	03	48	32.13	+08	00	31.5		809
1990	WF2	*	1990	11	18.20625	03	51	39.51	+10	17	18.0	18.5	809
1990	WF2		1990	11	20.13264	03	50	01.13	+10	16	21.7		809
1990	WG2	*	1990	11	18.20625	03	51	40.84	+07	25	34.7	18.8	809
1990	WG2		1990	11	20.13264	03	50	06.64	+07	18	32.7		809
1990	WH2	*	1990	11	18.20625	03	51	44.63	+08	36	23.5	19.0	809
1990	WH2		1990	11	20.13264	03	49	47.24	+08	37	41.1		809
1990	WJ2	*	1990	11	18.20625	03	51	54.71	+06	50	23.3	18.2	809
1990	WJ2		1990	11	20.13264	03	50	12.25	+06	26	33.9		809
5568	P-L		1990	09	22.17153	00	31	17.55	-03	48	07.5	17.7	809
5568	P-L		1990	09	22.18472	00	31	16.75	-03	48	09.5		809
5568	P-L		1990	09	22.19792	00	31	15.95	-03	48	10.6		809
5568	P-L		1990	09	25.22153	00	28	26.25	-03	54	25.4	17.9	809
5568	P-L		1990	09	25.23472	00	28	25.47	-03	54	26.0		809
5568	P-L		1990	09	25.24792	00	28	24.69	-03	54	28.1		809
6726	P-L		1990	08	20.23194	23	31	39.97	-06	32	46.8	18.8	809
6726	P-L		1990	08	20.24514	23	31	39.48	-06	32	50.7		809
6726	P-L		1990	08	20.25833	23	31	38.99	-06	32	54.5		809
6726	P-L		1990	08	26.20347	23	28	06.70	-07	04	13.7	18.7	809
6726	P-L		1990	08	26.21667	23	28	06.22	-07	04	18.8		809
6726	P-L		1990	08	26.22986	23	28	05.71	-07	04	23.5		809
4170	T-2		1990	09	22.17153	00	26	58.77	-03	55	22.3	17.7	809
4170	T-2		1990	09	22.18472	00	26	58.05	-03	55	30.5		809
4170	T-2		1990	09	22.19792	00	26	57.29	-03	55	37.5		809
4170	T-2		1990	09	25.22153	00	24	18.31	-04	23	42.5	17.6	809
4170	T-2		1990	09	25.23472	00	24	17.58	-04	23	49.8		809
4170	T-2		1990	09	25.24792	00	24	16.81	-04	23	57.7		809
451			1990	11	18.20625	03	50	31.60	+07	03	27.6	10.0	809
451			1990	11	20.13264	03	48	45.63	+07	05	51.7		809
486			1990	11	15.21111	04	03	56.79	+10	16	14.7	16.8	809
486			1990	11	17.23611	04	01	48.83	+10	14	39.0		809
551			1990	08	16.21389	23	02	43.04	-06	26	15.7	15.8	809
551			1990	08	16.22708	23	02	42.47	-06	26	18.3		809
551			1990	08	16.24028	23	02	41.94	-06	26	21.6		809
551			1990	08	18.22361	23	01	26.06	-06	34	08.2	15.5	809
551			1990	08	18.23681	23	01	25.45	-06	34	10.9		809
551			1990	08	18.25000	23	01	24.85	-06	34	14.2		809
560			1990	11	18.20625	03	39	08.73	+08	17	16.0	15.0	809
560			1990	11	20.13264	03	37	18.65	+08	15	42.1		809
612			1990	10	16.29792	03	08	38.12	+08	54	32.9		809
612			1990	10	20.24444	03	06	06.80	+08	10	42.7	17.0	809
612			1990	10	20.27083	03	06	05.66	+08	10	25.4		809
738			1990	09	22.12500	00	02	32.88	-03	48	41.5	16.5	809
738			1990	09	22.13819	00	02	32.22	-03	48	46.7		809
738			1990	09	22.15139	00	02	31.62	-03	48	50.7		809
738			1990	09	25.17778	00	00	18.83	-04	05	04.1	16.0	809
738			1990	09	25.19097	00	00	18.23	-04	05	08.2		809
738			1990	09	25.20417	00	00	17.58	-04	05	12.4		809
744			1990	10	16.29792	03	15	52.15	+07	23	24.9		809
744			1990	10	20.24444	03	13	33.41	+07	06	27.7	17.8	809
744			1990	10	20.27083	03	13	32.20	+07	06	20.2		809
820			1990	09	22.12500	00	16	22.68	-06	46	40.9	16.8	809
820			1990	09	22.13819	00	16	22.12	-06	46	44.9		809
820			1990	09	22.15139	00	16	21.50	-06	46	49.9		809
820			1990	09	25.17778	00	14	10.28	-07	03	36.2	17.3	809
820			1990	09	25.19097	00	14	09.68	-07	03	40.5		809
820			1990	09	25.20417	00	14	09.03	-07	03	45.2		809

946	1990 08 16.21389	23 09 01.34	-07 38 15.8	18.0	809
946	1990 08 16.22708	23 09 00.86	-07 38 19.5		809
946	1990 08 16.24028	23 09 00.35	-07 38 22.9		809
1031	1990 11 15.27986	04 31 53.43	+11 00 27.4	15.8	809
1031	1990 11 17.28125	04 30 22.64	+10 45 51.8		809
1074	1990 08 20.23194	23 21 00.22	-05 17 30.4	16.5	809
1074	1990 08 20.24514	23 20 59.70	-05 17 34.2		809
1074	1990 08 20.25833	23 20 59.19	-05 17 36.6		809
1074	1990 08 26.20347	23 17 18.01	-05 41 02.5	16.8	809
1074	1990 08 26.21667	23 17 17.37	-05 41 06.2		809
1074	1990 08 26.22986	23 17 16.85	-05 41 09.6		809
1125	1990 08 20.23194	23 28 58.67	-07 32 52.2	18.3	809
1125	1990 08 20.24514	23 28 58.19	-07 32 55.8		809
1125	1990 08 20.25833	23 28 57.64	-07 32 59.6		809
1125	1990 08 26.20347	23 25 22.26	-08 00 48.1	18.5	809
1125	1990 08 26.21667	23 25 21.76	-08 00 53.0		809
1125	1990 08 26.22986	23 25 21.23	-08 00 56.4		809
1393	1990 09 25.22153	00 27 23.02	-05 27 01.8	16.5	809
1393	1990 09 25.23472	00 27 22.18	-05 27 04.4		809
1393	1990 09 25.24792	00 27 21.34	-05 27 08.2		809
1434	1990 08 16.21389	22 50 41.38	-08 02 51.8	16.5	809
1434	1990 08 16.22708	22 50 40.88	-08 02 58.4		809
1434	1990 08 16.24028	22 50 40.36	-08 03 04.2		809
1434	1990 08 18.22361	22 49 28.20	-08 18 16.4	16.8	809
1434	1990 08 18.23681	22 49 27.59	-08 18 23.4		809
1434	1990 08 18.25000	22 49 27.06	-08 18 28.9		809
1492	1990 08 16.21389	23 00 21.87	-09 38 57.5	17.8	809
1492	1990 08 16.22708	23 00 21.18	-09 39 04.8		809
1492	1990 08 16.24028	23 00 20.53	-09 39 11.9		809
1492	1990 08 18.22361	22 58 44.62	-09 56 33.4	17.6	809
1492	1990 08 18.23681	22 58 43.88	-09 56 40.4		809
1492	1990 08 18.25000	22 58 43.18	-09 56 47.2		809
1586	1990 09 22.12500	00 07 13.16	-04 57 38.8	17.8	809
1586	1990 09 22.13819	00 07 12.41	-04 57 43.9		809
1586	1990 09 22.15139	00 07 11.73	-04 57 49.3		809
1586	1990 09 25.17778	00 04 31.15	-05 17 56.4	17.6	809
1586	1990 09 25.19097	00 04 30.43	-05 18 01.7		809
1586	1990 09 25.20417	00 04 29.68	-05 18 06.8		809
1663	1990 10 16.29792	03 14 13.71	+09 50 03.2		809
1663	1990 10 20.24444	03 11 12.21	+09 43 21.3	16.0	809
1663	1990 10 20.27083	03 11 10.71	+09 43 18.7		809
1705	1990 11 15.21111	04 15 16.30	+09 45 32.3	17.5	809
1705	1990 11 17.23611	04 13 10.04	+09 32 03.1		809
1764	1990 08 16.21389	23 03 07.23	-06 25 32.8	17.7	809
1764	1990 08 16.22708	23 03 06.73	-06 25 36.5		809
1764	1990 08 16.24028	23 03 06.23	-06 25 40.0		809
1764	1990 08 18.22361	23 01 50.91	-06 34 50.9	17.7	809
1764	1990 08 18.23681	23 01 50.34	-06 34 55.2		809
1764	1990 08 18.25000	23 01 49.74	-06 34 58.7		809
1809	1990 09 22.17153	00 30 57.50	-02 16 53.6	17.4	809
1809	1990 09 22.18472	00 30 56.85	-02 16 57.6		809
1809	1990 09 22.19792	00 30 56.23	-02 17 01.6		809
1809	1990 09 25.22153	00 28 37.25	-02 32 55.7	17.3	809
1809	1990 09 25.23472	00 28 36.56	-02 32 59.8		809
1809	1990 09 25.24792	00 28 35.91	-02 33 04.4		809
1961	1990 09 22.17153	00 37 10.02	-00 19 56.3	17.0	809
1961	1990 09 22.18472	00 37 09.39	-00 19 59.0		809
1961	1990 09 22.19792	00 37 08.75	-00 20 01.4		809
1961	1990 09 25.22153	00 34 52.14	-00 29 54.2	17.3	809

1961	1990 09 25.23472	00 34 51.45	-00 29 57.1		809
1961	1990 09 25.24792	00 34 50.77	-00 29 59.8		809
1972	1990 09 22.17153	00 38 25.09	-01 18 00.1	17.4	809
1972	1990 09 22.18472	00 38 24.37	-01 18 03.5		809
1972	1990 09 22.19792	00 38 23.57	-01 18 07.3		809
1972	1990 09 25.22153	00 35 38.85	-01 31 47.1	17.7	809
1972	1990 09 25.23472	00 35 38.09	-01 31 50.3		809
1972	1990 09 25.24792	00 35 37.36	-01 31 54.5		809
1988	1990 10 16.29792	03 08 10.30	+09 44 15.8	18.2	809
1988	1990 10 20.24444	03 04 54.58	+09 28 18.0	17.7	809
1988	1990 10 20.27083	03 04 53.09	+09 28 12.4		809
1992	1990 11 15.21111	04 07 23.79	+07 54 27.9	18.6	809
1992	1990 11 17.23611	04 05 47.41	+07 45 13.5		809
2058	1990 08 26.20347	23 14 32.18	-08 45 36.3	17.7	809
2058	1990 08 26.21667	23 14 31.57	-08 45 40.4		809
2058	1990 08 26.22986	23 14 30.96	-08 45 44.5		809
2082	1990 09 22.17153	00 26 57.16	-01 57 09.9	18.6	809
2082	1990 09 22.18472	00 26 56.44	-01 57 14.9		809
2082	1990 09 22.19792	00 26 55.85	-01 57 18.2		809
2082	1990 09 25.22153	00 24 35.55	-02 12 32.2	18.5	809
2082	1990 09 25.23472	00 24 34.88	-02 12 36.3		809
2082	1990 09 25.24792	00 24 34.26	-02 12 40.1		809
2176	1990 09 22.12500	00 10 09.36	-03 56 40.2	17.9	809
2176	1990 09 22.13819	00 10 08.74	-03 56 44.1		809
2176	1990 09 22.15139	00 10 08.10	-03 56 48.0		809
2176	1990 09 25.17778	00 07 46.77	-04 11 56.8	17.8	809
2176	1990 09 25.19097	00 07 46.11	-04 12 00.6		809
2176	1990 09 25.20417	00 07 45.43	-04 12 05.3		809
2207	1990 10 16.29792	03 14 10.86	+10 11 19.6		809
2207	1990 10 20.24444	03 12 31.09	+10 00 24.3	17.5	809
2207	1990 10 20.27083	03 12 30.30	+10 00 20.5		809
2250	1990 08 20.23194	23 15 39.03	-04 51 36.0	17.5	809
2250	1990 08 20.24514	23 15 38.53	-04 51 39.7		809
2250	1990 08 20.25833	23 15 37.99	-04 51 42.8		809
2250	1990 08 26.20347	23 12 04.06	-05 18 46.8	17.2	809
2250	1990 08 26.21667	23 12 03.50	-05 18 50.4		809
2250	1990 08 26.22986	23 12 02.94	-05 18 54.7		809
2325	1990 08 16.21389	22 51 23.91	-08 05 55.7	17.9	809
2325	1990 08 16.22708	22 51 23.35	-08 05 59.7		809
2325	1990 08 16.24028	22 51 22.79	-08 06 03.6		809
2325	1990 08 18.22361	22 50 08.30	-08 15 09.0	17.7	809
2325	1990 08 18.23681	22 50 07.69	-08 15 12.0		809
2325	1990 08 18.25000	22 50 07.11	-08 15 15.9		809
2395	1990 08 26.20347	23 10 02.52	-05 47 29.1	18.0	809
2395	1990 08 26.21667	23 10 01.96	-05 47 32.8		809
2395	1990 08 26.22986	23 10 01.38	-05 47 36.5		809
2636	1990 11 18.20625	03 47 57.56	+09 33 51.4	18.0	809
2636	1990 11 20.13264	03 46 17.99	+09 32 01.8		809
2740	1990 11 15.27986	04 31 09.68	+12 09 52.0	18.0	809
2740	1990 11 17.28125	04 29 36.87	+12 01 06.9		809
2796	1990 08 16.21389	22 57 19.92	-05 43 54.8	18.0	809
2796	1990 08 16.22708	22 57 19.37	-05 44 01.4		809
2796	1990 08 16.24028	22 57 18.85	-05 44 08.3		809
2796	1990 08 18.22361	22 56 00.37	-06 01 51.0	18.2	809
2796	1990 08 18.23681	22 55 59.71	-06 01 58.5		809
2796	1990 08 18.25000	22 55 59.22	-06 02 04.8		809
2909	1990 11 18.20625	03 36 57.47	+09 56 51.1	16.6	809
2909	1990 11 20.13264	03 35 11.04	+09 58 01.5		809
2923	1990 08 16.21389	23 00 40.13	-07 30 49.0	18.9	809

2923	1990 08	16.22708	23 00	39.43	-07 30	53.1		809
2923	1990 08	16.24028	23 00	38.77	-07 30	56.5		809
2923	1990 08	18.22361	22 59	04.53	-07 39	03.6	18.8	809
2923	1990 08	18.23681	22 59	03.79	-07 39	07.1		809
2923	1990 08	18.25000	22 59	03.15	-07 39	10.6		809
2991	1990 10	16.29792	03 12	48.41	+10 20	55.9		809
2991	1990 10	20.24444	03 09	18.42	+10 06	36.4	18.3	809
2991	1990 10	20.27083	03 09	16.90	+10 06	30.5		809
2998	1990 09	22.17153	00 30	21.80	+00 19	12.7	17.5	809
2998	1990 09	22.18472	00 30	21.12	+00 19	06.2		809
2998	1990 09	22.19792	00 30	20.48	+00 19	00.5		809
3117	1990 09	22.17153	00 30	31.38	-02 15	16.2	17.7	809
3117	1990 09	22.18472	00 30	30.71	-02 15	20.4		809
3117	1990 09	22.19792	00 30	30.07	-02 15	24.5		809
3117	1990 09	25.22153	00 28	07.63	-02 31	14.6	17.8	809
3117	1990 09	25.23472	00 28	06.93	-02 31	18.3		809
3117	1990 09	25.24792	00 28	06.28	-02 31	22.6		809
3457	1990 09	22.12500	00 01	41.45	-05 15	21.3	18.0	809
3457	1990 09	22.13819	00 01	40.78	-05 15	25.5		809
3457	1990 09	22.15139	00 01	40.09	-05 15	30.6		809
3457	1990 09	25.17778	23 59	16.66	-05 31	23.4	17.8	809
3457	1990 09	25.19097	23 59	15.98	-05 31	27.5		809
3457	1990 09	25.20417	23 59	15.34	-05 31	31.1		809
3579	1990 09	22.17153	00 45	14.08	-03 55	35.0	18.7	809
3579	1990 09	22.18472	00 45	13.17	-03 55	34.1		809
3579	1990 09	22.19792	00 45	12.16	-03 55	33.0		809
3579	1990 09	25.22153	00 41	34.55	-03 53	21.9	18.7	809
3579	1990 09	25.23472	00 41	33.62	-03 53	21.8		809
3579	1990 09	25.24792	00 41	32.63	-03 53	20.9		809
3773	1990 08	20.23194	23 27	15.36	-06 43	55.1	17.5	809
3773	1990 08	20.24514	23 27	14.89	-06 43	57.9		809
3773	1990 08	20.25833	23 27	14.35	-06 44	01.1		809
3773	1990 08	26.20347	23 23	49.09	-07 09	33.7	16.8	809
3773	1990 08	26.21667	23 23	48.52	-07 09	37.5		809
3773	1990 08	26.22986	23 23	47.91	-07 09	41.5		809
3835	1990 09	22.17153	00 29	44.90	-00 11	23.8	16.8	809
3835	1990 09	22.18472	00 29	44.34	-00 11	32.7		809
3835	1990 09	22.19792	00 29	43.82	-00 11	42.0		809
3835	1990 09	25.22153	00 27	41.29	-00 47	06.7	17.4	809
3835	1990 09	25.23472	00 27	40.73	-00 47	16.0		809
3835	1990 09	25.24792	00 27	40.16	-00 47	24.5		809
3853	1990 09	22.12500	00 17	29.48	-07 51	54.7	17.9	809
3853	1990 09	22.13819	00 17	28.87	-07 52	01.4		809
3853	1990 09	22.15139	00 17	28.26	-07 52	08.7		809
3853	1990 09	25.17778	00 15	13.46	-08 16	48.0	18.2	809
3853	1990 09	25.19097	00 15	12.75	-08 16	55.0		809
3853	1990 09	25.20417	00 15	12.12	-08 17	00.8		809
4072	1990 08	20.23194	23 31	13.87	-05 44	50.9	17.8	809
4072	1990 08	20.24514	23 31	13.25	-05 44	54.2		809
4072	1990 08	20.25833	23 31	12.61	-05 44	57.8		809
4072	1990 08	26.20347	23 26	19.25	-06 13	50.4	18.5	809
4072	1990 08	26.21667	23 26	18.58	-06 13	54.4		809
4072	1990 08	26.22986	23 26	17.82	-06 13	59.5		809
4333	1990 10	16.29792	03 06	37.68	+10 01	10.5		809
4333	1990 10	20.24444	03 03	21.73	+09 38	50.5	18.1	809
4333	1990 10	20.27083	03 03	20.21	+09 38	41.3		809
4592	1990 08	20.23194	23 20	51.62	-04 58	13.2	17.8	809
4592	1990 08	20.24514	23 20	51.14	-04 58	16.2		809
4592	1990 08	20.25833	23 20	50.61	-04 58	18.9		809

4592	1990 08 26.20347	23 17 17.15	-05 21 35.0	17.9	809
4592	1990 08 26.21667	23 17 16.61	-05 21 38.9		809
4592	1990 08 26.22986	23 17 16.02	-05 21 41.9		809
4613	1990 08 26.20347	23 11 32.60	-08 34 17.7	16.5	809
4613	1990 08 26.21667	23 11 32.06	-08 34 25.8		809
4613	1990 08 26.22986	23 11 31.53	-08 34 32.7		809
4622	1990 08 20.23194	23 17 00.03	-04 09 27.4	18.1	809
4622	1990 08 20.24514	23 16 59.52	-04 09 30.8		809
4622	1990 08 20.25833	23 16 59.06	-04 09 34.8		809
4622	1990 08 26.20347	23 13 25.53	-04 35 44.8	18.3	809
4622	1990 08 26.21667	23 13 24.98	-04 35 48.0		809
4622	1990 08 26.22986	23 13 24.44	-04 35 52.1		809
4623	1990 08 26.20347	23 07 49.05	-06 48 10.7	18.4	809
4623	1990 08 26.21667	23 07 48.34	-06 48 14.4		809
4623	1990 08 26.22986	23 07 47.70	-06 48 18.0		809
4624	1990 08 20.23194	23 21 37.61	-07 52 12.8	18.6	809
4624	1990 08 20.24514	23 21 37.11	-07 52 16.8		809
4624	1990 08 20.25833	23 21 36.62	-07 52 20.1		809
4624	1990 08 26.20347	23 17 48.61	-08 20 41.7	18.7	809
4624	1990 08 26.21667	23 17 48.00	-08 20 45.1		809
4624	1990 08 26.22986	23 17 47.40	-08 20 49.2		809
4639	1990 09 22.12500	00 16 14.54	-06 23 14.0	18.5	809
4639	1990 09 22.13819	00 16 13.75	-06 23 16.7		809
4639	1990 09 22.15139	00 16 12.93	-06 23 17.9		809
4639	1990 09 25.17778	00 13 12.30	-06 30 58.5	18.4	809
4639	1990 09 25.19097	00 13 11.50	-06 31 01.0		809
4639	1990 09 25.20417	00 13 10.66	-06 31 02.8		809
4641	1990 08 20.23194	23 29 31.32	-06 20 54.3	17.7	809
4641	1990 08 20.24514	23 29 30.88	-06 20 57.7		809
4641	1990 08 20.25833	23 29 30.32	-06 21 01.9		809
4641	1990 08 26.20347	23 25 59.49	-06 53 19.5	17.7	809
4641	1990 08 26.21667	23 25 58.95	-06 53 25.2		809
4641	1990 08 26.22986	23 25 58.32	-06 53 29.5		809
4642	1990 08 16.21389	23 02 53.47	-06 19 19.4	18.3	809
4642	1990 08 16.22708	23 02 52.96	-06 19 22.7		809
4642	1990 08 16.24028	23 02 52.42	-06 19 27.1		809
4642	1990 08 18.22361	23 01 38.23	-06 27 55.0	18.4	809
4642	1990 08 18.23681	23 01 37.63	-06 27 59.1		809
4642	1990 08 18.25000	23 01 37.12	-06 28 02.5		809
4643	1990 08 20.23194	23 22 42.04	-06 59 00.1	17.7	809
4643	1990 08 20.24514	23 22 41.41	-06 59 04.6		809
4643	1990 08 20.25833	23 22 40.82	-06 59 09.1		809
4643	1990 08 26.20347	23 18 23.02	-07 34 26.8	17.8	809
4643	1990 08 26.21667	23 18 22.34	-07 34 31.9		809
4643	1990 08 26.22986	23 18 21.63	-07 34 37.1		809

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K. Kawanishi, 2045-1, Kariya, Akou, Hyogo-Ken 678-02, Japan

0.20-m f/4.8 reflector

AGK3, SAO

1990 TP	1990 10 18.59931	01 47 17.05	+02 40 58.7	16.0	871
1990 TP	1990 10 18.61806	01 47 16.09	+02 40 53.8	16.0	871
1990 TX	1990 10 26.58993	01 44 49.85	+02 47 42.8	15.5	871
1990 TX	1990 10 26.60972	01 44 48.64	+02 47 43.6	15.5	871
1990 TX	1990 11 10.58264	01 34 25.34	+03 14 08.9	16	871
1990 TX	1990 11 10.60347	01 34 24.84	+03 14 12.2		871
1990 VY2	1990 11 24.64167	03 13 18.97	+23 46 00.4	16.0	871
1990 VA3	1990 11 23.62083	03 36 31.56	+22 59 10.0	16.0	871

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M. Arai, 2695, Tomita, Saitama, 369-12 Japan

Observers M. Arai, H. Mori

Measurer H. Mori

0.30-m f/3.8 reflector

1982 TP1	1990 11 15.69583	03 32 59.98	+19 55 07.8	16.5	d	875
1982 TP1	1990 11 15.71285	03 32 58.90	+19 55 01.1			875
1982 TP1	1990 11 16.59740	03 32 05.76	+19 50 33.1	16.5		875
1982 TP1	1990 11 16.61545	03 32 04.56	+19 50 27.1			875
1990 UQ2	1990 11 16.56198	03 21 00.53	+21 34 18.0	16.5		875
1990 UQ2	1990 11 16.58125	03 20 59.17	+21 34 18.5			875
1990 VK1	1990 11 15.59525	03 13 37.83	+20 26 07.5	16.5		875
1990 VK1	1990 11 15.61389	03 13 36.60	+20 26 03.7			875
1990 VK1	1990 11 16.51875	03 12 46.40	+20 23 51.5	16.5		875
1990 VL1	1990 11 15.59525	03 20 46.93	+20 05 09.9	17		875
1990 VL1	1990 11 15.61389	03 20 45.97	+20 04 58.1			875
1990 VL1	1990 11 16.51875	03 19 54.46	+19 57 08.7	17		875
1990 VM1	1990 11 16.59740	03 24 58.32	+20 37 31.0	16		875
1990 VM1	1990 11 16.61545	03 24 57.47	+20 37 17.1			875
1990 VV2 *	1990 11 12.56528	03 06 39.57	+16 49 50.2	16.5		875
1990 VV2	1990 11 12.58333	03 06 38.48	+16 49 39.7			875
1990 VV2	1990 11 15.55972	03 04 09.36	+16 25 23.9	16.5		875
1990 VV2	1990 11 15.57778	03 04 08.36	+16 25 15.5			875
1990 VW2 *	1990 11 12.56528	03 10 47.04	+16 05 05.4	17		875
1990 VW2	1990 11 12.58333	03 10 45.83	+16 05 00.1			875
1990 VW2	1990 11 15.55972	03 07 49.41	+15 47 00.5	17		875
1990 VW2	1990 11 15.57778	03 07 48.43	+15 46 53.7			875
1990 VY2	1990 11 16.56198	03 21 47.68	+24 10 11.2	16.5		875
1990 VY2	1990 11 16.58125	03 21 46.49	+24 10 10.5			875
1990 VY2	1990 11 21.65139	03 16 22.14	+23 55 27.3	16		875
1990 VY2	1990 11 21.67014	03 16 20.95	+23 55 24.1			875
1990 VR3	1990 11 16.59740	03 34 31.20	+22 02 11.9	16.5		875
1990 VR3	1990 11 16.61545	03 34 30.22	+22 02 12.6			875
1990 VR3	1990 11 21.68056	03 29 45.90	+22 02 36.2	16		875
1990 VR3	1990 11 21.69653	03 29 44.94	+22 02 36.0			875

877 Okutama

S. Hayakawa, 1-31-33, Nagano, Gyoda-Shi, Saitama-Ken, 361 Japan

Observers T. Hioki, S. Hayakawa

Measurers S. Hayakawa, T. Hioki

0.30-m f/3.8 hyperboloid astrocamera

AGK3, SAO, GSC

1989 JC	1990 11 13.68889	03 43 44.45	+18 37 45.9	15.0		877
1989 JC	1990 11 13.70694	03 43 43.18	+18 37 21.1			877
1989 NG1	1990 10 19.69618	02 04 21.68	+18 47 19.1	16.5		877
1989 NG1	1990 10 19.71354	02 04 20.70	+18 47 10.9			877
1989 NG1	1990 10 21.73889	02 02 46.37	+18 34 46.9			877
1989 NG1	1990 10 21.76354	02 02 45.04	+18 34 37.9			877
1990 UW	1990 11 10.58229	01 47 53.22	+16 43 44.0	15.5		877
1990 UW	1990 11 10.62164	01 47 50.84	+16 43 31.1	15.5		877
1990 UW	1990 11 12.61424	01 46 06.10	+16 33 45.3	15.5		877
1990 UW	1990 11 12.63310	01 46 05.10	+16 33 38.3			877
1990 UJ1 *	1990 10 19.66389	01 51 45.43	+18 29 09.5	16.5		877
1990 UJ1	1990 10 19.68194	01 51 44.69	+18 29 01.3			877
1990 UJ1	1990 10 21.68464	01 50 12.29	+18 06 53.5	16.5		877
1990 UJ1	1990 10 21.70486	01 50 11.17	+18 06 39.2			877
1990 UJ1	1990 10 26.61910	01 46 23.24	+17 10 17.9	16.0		877
1990 UJ1	1990 10 26.64132	01 46 21.96	+17 09 59.4			877
1990 UJ1	1990 11 10.53368	01 36 05.20	+14 13 40.4	16.5		877

1990 UJ1	1990 11	10.56250	01 36	04.03	+14 13	18.7		877
1990 UK1 *	1990 10	19.69618	02 07	21.49	+19 21	51.8	16.5	877
1990 UK1	1990 10	19.71354	02 07	20.58	+19 21	44.7		877
1990 UK1	1990 10	21.73889	02 05	31.47	+19 07	21.8		877
1990 UK1	1990 10	21.76354	02 05	30.01	+19 07	11.3		877
1990 UK1	1990 10	26.68090	02 01	01.60	+18 29	46.3	16.0	877
1990 UK1	1990 10	26.70174	02 01	00.27	+18 29	33.6		877
1990 UK1	1990 11	10.58229	01 48	44.20	+16 26	47.9	16.5	877
1990 UK1	1990 11	10.62164	01 48	42.61	+16 26	26.3		877
1990 UE3	1990 11	11.72014	04 03	41.92	+24 05	02.4	15.5	877
1990 UE3	1990 11	11.73750	04 03	41.01	+24 05	02.9	15.5	877
1990 UE3	1990 11	12.72049	04 02	52.57	+24 05	06.5	15.5	877
1990 UE3	1990 11	12.74444	04 02	51.29	+24 05	07.5		877
1990 VP1 *	1990 11	10.53368	01 36	29.29	+13 00	13.7	16.5	877
1990 VP1	1990 11	10.56250	01 36	27.60	+12 59	59.5	16.5	877
1990 VP1	1990 11	12.58056	01 34	51.19	+12 43	36.0	16.5	877
1990 VP1	1990 11	12.59896	01 34	50.31	+12 43	27.0		877
1990 VQ1 *	1990 11	10.53368	01 36	34.25	+12 54	35.7	17.0	877
1990 VQ1	1990 11	10.56250	01 36	33.16	+12 54	21.6	17.0	877
1990 VQ1	1990 11	12.58056	01 35	16.23	+12 37	22.7	16.5	877
1990 VQ1	1990 11	12.59896	01 35	15.76	+12 37	15.8		877
1990 VR1 *	1990 11	10.67269	03 47	49.85	+15 37	35.8	16.5	877
1990 VR1	1990 11	10.74271	03 47	45.05	+15 37	15.4		877
1990 VR1	1990 11	11.61840	03 46	45.57	+15 33	32.5	16.5	877
1990 VR1	1990 11	11.63576	03 46	44.38	+15 33	27.7		877
1990 VS1 *	1990 11	11.58472	03 28	59.95	+16 05	06.0	16.5	877
1990 VS1	1990 11	11.60243	03 28	58.93	+16 05	05.4	16.5	877
1990 VS1	1990 11	12.65278	03 27	58.50	+16 04	06.6	16.5	877
1990 VS1	1990 11	12.67257	03 27	57.44	+16 04	03.0		877
1990 VD2 *	1990 11	13.65556	03 31	49.78	+18 15	17.9	16.0	877
1990 VD2	1990 11	13.67396	03 31	48.85	+18 15	14.9		877
1990 VD2	1990 11	15.69583	03 30	05.03	+18 08	33.4	16.0	877
1990 VD2	1990 11	15.71285	03 30	04.23	+18 08	31.0		877
1990 VE2 *	1990 11	13.68889	03 48	45.52	+19 03	26.5	16.5	877
1990 VE2	1990 11	13.70694	03 48	44.41	+19 03	21.7		877
1990 VE2	1990 11	15.72674	03 46	36.42	+18 51	28.1	16.0	877
1990 VE2	1990 11	15.74479	03 46	35.29	+18 51	23.2		877
1990 WF *	1990 11	16.74667	03 52	36.26	+11 16	26.1	15.0	877
1990 WF	1990 11	16.76620	03 52	35.13	+11 16	24.7		877
1990 WF	1990 11	22.65521	03 46	27.09	+11 03	58.2	15.0	877
1990 WF	1990 11	22.67674	03 46	25.65	+11 03	55.5		877
1990 WG *	1990 11	16.78056	04 19	44.99	+16 32	01.0	16.5	877
1990 WG	1990 11	16.79826	04 19	44.17	+16 32	02.9		877
1990 WG	1990 11	22.69144	04 13	20.28	+16 37	08.1	16.0	877
1990 WG	1990 11	22.71042	04 13	18.91	+16 37	07.4		877
4472	1990 10	19.66389	01 57	01.68	+17 17	21.7	16.0	877
4472	1990 10	19.68194	01 57	00.62	+17 17	22.0		877
4472	1990 10	21.68464	01 54	50.42	+17 16	09.9	15.5	877
4472	1990 10	21.70486	01 54	48.88	+17 16	09.8		877

881 Toyota

T. Urata, 6-1, Muramatsuhara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan

Observers K. Suzuki, T. Urata

Measurer T. Urata

0.31-m f/5.7 reflector

AGK3

1990 UD	1990 10	28.54479	02 05	47.82	+06 36	54.9	15	881
1990 UD	1990 10	28.55590	02 05	46.98	+06 36	54.9		881
1990 UD	1990 10	28.56701	02 05	46.32	+06 36	54.8		881

1990 UE3	1990 11 15.58229	04 00 26.61	+24 04 54.3	16.5	881
1990 UE3	1990 11 15.60590	04 00 25.39	+24 04 53.4		881
1990 VH3	1990 11 15.58229	04 03 17.17	+24 22 31.7	17	881
1990 VH3	1990 11 15.60590	04 03 15.88	+24 22 24.1		881
1990 VB4 *	1990 11 14.55243	04 24 05.81	+19 24 13.0	17	881
1990 VB4	1990 11 14.57604	04 24 04.81	+19 24 06.9		881
1990 VB4	1990 11 21.54757	04 18 31.55	+18 54 55.0	16.5	881
1990 VB4	1990 11 21.56146	04 18 30.84	+18 54 51.4		881
1990 WM2 *	1990 11 16.66771	05 00 17.0	+20 11 14	16	r 881
1990 WM2	1990 11 16.69132	05 00 16.1	+20 11 01		r 881
1990 WM2	1990 11 17.63715	04 59 34.93	+20 01 14.1	16	881
1990 WM2	1990 11 17.65104	04 59 34.33	+20 01 06.3		881

885 JCPM Yakiimo Station

T. Urata, 6-1, Muramatsuhara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan

Observer A. Natori, T. Urata

Measurer T. Urata

0.20-m f/4.0 hyperboloid astrocamera

AGK3

1990 VD *	1990 11 10.57986	03 57 03.41	+20 50 12.6	16	885
1990 VD	1990 11 10.61875	03 57 01.37	+20 50 07.8		885
1990 VD	1990 11 11.67708	03 56 06.04	+20 47 04.5	16	885
1990 VD	1990 11 11.68472	03 56 05.72	+20 47 05.7		885
1990 VE *	1990 11 10.59514	03 59 18.84	+17 22 24.3	15.5	885
1990 VE	1990 11 10.63403	03 59 16.57	+17 22 26.6		885
1990 VE	1990 11 11.62847	03 58 22.82	+17 23 20.9	15.5	885
1990 VE	1990 11 11.65139	03 58 21.49	+17 23 20.5		885
1990 VL3 *	1990 11 15.62257	04 36 24.87	+11 42 35.8	15.5	885
1990 VL3	1990 11 15.65625	04 36 22.96	+11 42 38.6		885
1990 VL3	1990 11 17.57118	04 34 38.39	+11 45 56.3	15.5	885
1990 VL3	1990 11 17.57951	04 34 37.69	+11 45 58.4		885
1990 WW2 *	1990 11 23.64653	06 02 50.35	+16 25 04.1	15.5	885
1990 WW2	1990 11 23.66944	06 02 49.29	+16 25 18.0		885
1990 WW2	1990 11 23.69375	06 02 48.02	+16 25 30.6		885
1990 WW2	1990 11 26.62326	06 00 14.86	+16 53 36.3	15.5	885
1990 WW2	1990 11 26.65608	06 00 13.03	+16 53 55.2		885
2831	1990 11 11.62847	04 03 43.7	+16 57 03	15.5	N 885
2831	1990 11 12.56580	04 02 41.54	+16 56 39.6	15	885
2831	1990 11 12.58889	04 02 39.95	+16 56 38.2		885
3646	1990 11 10.57986	03 56 59.18	+21 09 15.7	16	885
3646	1990 11 10.61875	03 56 56.89	+21 09 09.4		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

1981 EP20	1990 10 18.55625	01 55 37.0	+12 39 42	15.5	886
1981 EP20	1990 10 18.56944	01 55 36.5	+12 39 40		886
1981 EP20	1990 10 20.66701	01 53 42.8	+12 34 52		886
1981 EP20	1990 10 20.68229	01 53 41.8	+12 34 51		886
1990 TG3	1990 10 26.57014	01 13 21.74	+07 47 24.0		886
1990 TG3	1990 10 26.58160	01 13 21.01	+07 47 17.6		886
1990 UH	1990 10 21.59306	01 53 15.2	+11 13 58		886
1990 UH	1990 10 21.60417	01 53 14.7	+11 13 52		886
1990 UH	1990 10 24.66007	01 50 25.89	+10 44 05.0		886
1990 UH	1990 10 24.67292	01 50 25.09	+10 43 58.2		886
1990 UW *	1990 10 19.62986	02 10 19.1	+18 21 30	15.5	886

1990 UW	1990 10	19.64358	02 10	18.0	+18 21	27		886
1990 UW	1990 10	21.64236	02 08	15.2	+18 14	36		886
1990 UW	1990 10	24.69132	02 05	03.76	+18 02	54.4		886
1990 UW	1990 10	24.70451	02 05	03.0	+18 02	52		886
1990 UW	1990 10	26.63698	02 03	00.1	+17 54	55		886
1990 UW	1990 10	26.64809	02 02	59.6	+17 54	50		886
1990 UQ1 *	1990 10	24.66007	01 48	13.16	+11 37	17.6	16.0	886
1990 UQ1	1990 10	24.67292	01 48	12.52	+11 37	09.1		886
1990 UQ1	1990 10	26.60781	01 46	34.2	+11 18	03		886
1990 UQ1	1990 10	26.61927	01 46	33.5	+11 17	59		886
6647 P-L	1990 10	24.67292	01 53	19.63	+11 11	20.3		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

AGK3

1990 TT12	1990 11	15.59120	03 57	52.45	+22 30	55.0	17	887
1990 TT12	1990 11	15.62407	03 57	50.34	+22 30	49.1		887
1990 TT12	1990 11	21.59861	03 52	20.15	+22 16	38.9	17	887
1990 TT12	1990 11	21.61979	03 52	18.86	+22 16	36.5		887
1990 UF3	1990 11	10.62049	04 02	57.27	+23 37	21.6	16.5	887
1990 UF3	1990 11	10.65197	04 02	55.37	+23 37	21.5		887
1990 VB1	1990 11	10.62049	04 06	23.34	+22 55	15.2	16.5	887
1990 VB1	1990 11	10.65197	04 06	21.75	+22 55	09.8		887
1990 VE4 *	1990 11	15.59120	03 58	57.69	+22 29	56.3	16.5	887
1990 VE4	1990 11	15.62407	03 58	55.41	+22 30	09.2		887
1990 VE4	1990 11	21.59861	03 52	20.71	+23 01	38.3	16.5	887
1990 VE4	1990 11	21.61979	03 52	19.19	+23 01	45.2		887

889 Karasuyama

T. Urata, 6-1, Muramatsuhara 1 Chome, Shimizu, Shizuoka-Ken 424, Japan

Observers S. Inoda, T. Urata

Measurer T. Urata

0.31-m f/5.6 reflector

AGK3

1990 UK	1990 11	10.58958	01 57	17.98	+05 10	55.6	17	889
1990 UK	1990 11	10.61597	01 57	16.47	+05 10	58.6		889
1990 VW1	1990 11	23.58785	03 58	35.21	+22 59	05.3	16	889
1990 VW1	1990 11	23.61007	03 58	33.96	+22 58	59.3		889
1990 WU2	1990 11	23.58785	03 58	54.33	+23 16	21.4	17	889
1990 WU2	1990 11	23.61007	03 58	52.60	+23 16	22.4		889
1990 WV2 *	1990 11	23.58785	03 57	22.89	+23 47	01.6	16.5	889
1990 WV2	1990 11	23.61007	03 57	21.34	+23 46	54.3		889
1902	1990 11	10.58958	02 00	20.47	+04 33	05.4	14.5	889
1902	1990 11	10.61597	02 00	19.37	+04 33	04.9		889

894 Kiyosato

S. Miyasaka, 3-8-501, 4 Chome, Nagayama, Tama, Tokyo 206, Japan

Observer S. Miyasaka

0.25-m reflector

AGK3, SAOC

1928 RB	1990 10	27.63412	03 14	16.17	-02 21	00.6		894
1928 RB	1990 10	27.67544	03 14	14.05	-02 21	26.9		894
1971 TF	1990 10	19.64616	00 53	42.30	+08 08	45.7		894
1971 TF	1990 10	19.66309	00 53	41.45	+08 08	41.4		894
1971 TF	1990 10	19.68987	00 53	40.11	+08 08	34.1		894
1986 VV6	1990 10	20.75163	02 15	19.42	+06 04	16.7		894

1986 VV6	1990 10	20.78817	02 15	17.33	+06 04	09.6		894
1986 VV6	1990 10	27.59884	02 08	52.34	+05 43	43.1		894
1986 VV6	1990 11	11.54637	01 54	57.01	+05 14	35.1		894
1986 VV6	1990 11	11.57426	01 54	55.52	+05 14	33.5		894
2008	1990 10	19.64616	00 54	02.29	+07 32	19.0		894
2008	1990 10	19.66309	00 54	01.37	+07 32	18.0		894
2008	1990 10	19.68987	00 54	00.00	+07 32	16.9		894
4618	1990 10	19.72627	02 32	47.52	+34 48	12.5		894
4618	1990 10	19.81258	02 32	42.63	+34 48	47.6		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

1990 UE1 *	1990 10	21.50833	02 13	32.55	+14 18	42.4	16	w	896
1990 UE1	1990 10	21.54028	02 13	30.68	+14 18	29.6		w	896
1990 UE1	1990 10	26.69236	02 09	08.4	+13 49	30	15.8		896
1990 UE1	1990 10	26.73681	02 09	05.62	+13 49	11.0			896
1990 UE1	1990 10	27.61076	02 08	20.76	+13 44	07.2			896
1990 UE1	1990 10	27.64201	02 08	19.09	+13 43	56.0			896
1990 UE1	1990 11	07.42708	01 59	19.01	+12 41	16.5	16		896
1990 UE1	1990 11	07.45417	01 59	17.72	+12 41	08.0			896
1990 UQ2	1990 11	07.46910	03 31	40.02	+21 07	49.4	16		896
1990 UQ2	1990 11	07.49688	03 31	38.11	+21 07	52.4			896
1990 UE3	1990 11	11.63819	04 03	46.05	+24 04	59.8	16.0		896
1990 UE3	1990 11	12.60833	04 02	58.33	+24 05	06.1			896
1990 VE	1990 11	12.62292	03 57	27.77	+17 24	13.2	16.5		896
1990 VE	1990 11	13.57049	03 56	34.71	+17 25	00.8			896
1990 VZ *	1990 11	07.48299	03 36	47.85	+20 10	32.5	16		896
1990 VZ	1990 11	07.51048	03 36	46.49	+20 10	31.4			896
1990 VZ	1990 11	10.55903	03 34	13.79	+20 07	00.3			896
1990 VZ	1990 11	10.58681	03 34	12.46	+20 06	57.7			896
1990 VA1 *	1990 11	11.55868	03 52	05.18	+24 21	26.8	16.5		896
1990 VA1	1990 11	11.59618	03 52	02.60	+24 21	29.0			896
1990 VA1	1990 11	12.54653	03 51	02.3	+24 22	59		R	896
1990 VA1	1990 11	12.57708	03 51	00.3	+24 23	05		R	896
1990 VA1	1990 11	14.64861	03 48	44.37	+24 25	57.7	16.0		896
1990 VA1	1990 11	14.68229	03 48	41.92	+24 26	02.1			896
1990 VC4 *	1990 11	14.57743	04 16	41.5	+15 56	28	16	E	896
1990 VC4	1990 11	14.61771	04 16	39.1	+15 56	31		E	896
1990 VC4	1990 11	21.62708	04 10	00.66	+16 03	46.2	16.0		896
1990 VC4	1990 11	21.65973	04 09	58.86	+16 03	47.9			896
2689	1990 10	27.62535	02 56	44.03	+12 00	18.5	17.5		896
2689	1990 10	27.65764	02 56	42.08	+12 00	04.0			896
3864	1990 10	21.50833	02 16	30.36	+14 27	34.0			896
3864	1990 10	21.54028	02 16	28.56	+14 27	28.3			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

1987 YJ	1990 10	20.65947	03 10	31.55	+26 42	11.2	16		898
1987 YJ	1990 10	20.68089	03 10	30.40	+26 42	09.4			898
1989 JC	1990 10	31.65278	03 56	58.37	+23 19	04.1	16		898
1989 JC	1990 10	31.67659	03 56	57.04	+23 18	35.4			898
1990 UE3	1990 11	11.59491	04 03	48.45	+24 05	03.0	16.5		898

1990 UE3	1990 11 11.61739	04 03 47.18	+24 05 03.7		898
1990 UE3	1990 11 17.60281	03 58 39.39	+24 04 21.6	16	898
1990 UE3	1990 11 17.64386	03 58 37.39	+24 04 21.2		898
1990 UE3	1990 11 22.50268	03 54 12.57	+24 01 45.0	16	898
1990 UE3	1990 11 22.54112	03 54 10.35	+24 01 44.0		898
1990 UF3	1990 11 11.59491	04 01 53.76	+23 37 11.1	16	898
1990 VA1	1990 11 22.48929	03 39 50.43	+24 31 49.7	16	898
1990 VA1	1990 11 22.52958	03 39 47.66	+24 31 52.1		898
1990 VJ1 *	1990 11 11.71119	03 41 49.07	+23 09 42.1	16.5	898
1990 VJ1	1990 11 11.73383	03 41 47.52	+23 09 29.5		898
1990 VJ1	1990 11 12.46786	03 41 03.10	+23 04 52.6	16	898
1990 VJ1	1990 11 12.49061	03 41 01.97	+23 04 40.7		898
1990 VW1 *	1990 11 11.63009	04 09 08.70	+24 15 03.4	16	898
1990 VW1	1990 11 11.65166	04 09 07.70	+24 14 56.6		898
1990 VW1	1990 11 14.54070	04 06 46.73	+23 58 19.7	16	898
1990 VW1	1990 11 14.56233	04 06 45.02	+23 58 11.8		898
1990 VX1 *	1990 11 11.63009	04 11 52.15	+21 53 04.2	16.5	898
1990 VX1	1990 11 11.65166	04 11 51.18	+21 53 00.4		898
1990 VX1	1990 11 14.57740	04 08 56.5	+21 41 14	16.5	V 898
1990 VX1	1990 11 14.60682	04 08 54.7	+21 41 07		V 898
1990 VX1	1990 11 22.51731	04 00 30.77	+21 06 18.7	16.5	898
1990 VX1	1990 11 22.55134	04 00 28.74	+21 06 09.8		F 898
1990 VJ2 *	1990 11 11.63009	04 12 13.25	+22 26 21.9	16.5	898
1990 VJ2	1990 11 11.65166	04 12 12.06	+22 26 17.7		898
1990 VJ2	1990 11 14.57740	04 09 39.1	+22 13 28	16	F 898
1990 VJ2	1990 11 14.60682	04 09 37.7	+22 13 19		F 898
1990 VJ2	1990 11 17.63150	04 06 51.46	+21 59 20.4	15.5	898
1990 VJ2	1990 11 17.65712	04 06 49.25	+21 59 10.2		898
1990 VJ2	1990 11 22.51731	04 02 10.84	+21 35 20.6	16	898
1990 VJ2	1990 11 22.55134	04 02 08.62	+21 35 07.3		898
1990 VJ3 *	1990 11 12.46786	03 44 47.60	+26 22 48.5	16.5	898
1990 VJ3	1990 11 12.49061	03 44 46.51	+26 22 40.9		898
1990 VJ3	1990 11 17.56296	03 40 18.17	+25 56 15.0	16	898
1990 VJ3	1990 11 17.58672	03 40 16.95	+25 56 09.4		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 VE4	1990 11 22.50268	03 51 19.70	+23 06 11.6	16	898
1990 VE4	1990 11 22.54112	03 51 16.84	+23 06 23.5		898
142	1990 11 22.50268	03 46 30.87	+22 42 51.5	14	898
142	1990 11 22.54112	03 46 28.31	+22 42 43.5		898
494	1990 10 26.54979	03 19 13.43	+19 50 01.9	14.5	898
494	1990 10 26.57120	03 19 12.36	+19 50 00.3		898
494	1990 11 12.54337	03 04 28.94	+19 26 02.1	14.5	898
494	1990 11 12.57666	03 04 26.93	+19 26 01.7		898
508	1990 10 31.65278	03 56 59.33	+23 58 22.8		898
508	1990 10 31.67659	03 56 58.15	+23 58 24.8		898
508	1990 11 22.48929	03 37 30.56	+24 17 23.8	12	898
508	1990 11 22.52958	03 37 28.32	+24 17 27.0		898
847	1990 11 17.60281	03 59 54.94	+22 44 30.6	14	898
847	1990 11 17.64386	03 59 52.60	+22 44 23.8		898
847	1990 11 22.50268	03 55 16.91	+22 26 56.2	14	898
847	1990 11 22.54112	03 55 14.78	+22 26 47.7		898
1340	1990 11 11.63009	04 08 42.17	+21 33 06.2	16	898
1340	1990 11 11.65166	04 08 41.13	+21 33 03.6		898
1340	1990 11 17.63150	04 03 56.33	+21 20 38.8	16.5	898
1340	1990 11 17.65712	04 03 54.5	+21 20 36		F 898
1835	1990 11 22.50268	03 52 05.53	+21 32 50.9	15.5	898
1835	1990 11 22.54112	03 52 03.44	+21 32 43.7		898
1962	1990 11 11.50784	03 00 54.87	+18 34 51.7	15.5	898

1962	1990	11	11.53437	03	00	54.25	+18	34	48.5		898
1962	1990	11	12.54337	03	00	02.31	+18	31	49.7	14	898
1962	1990	11	12.57666	03	00	00.73	+18	31	44.3		898
2581	1990	10	26.54979	03	17	23.86	+21	06	34.9	15.5	898
2581	1990	10	26.57120	03	17	22.82	+21	06	28.6		898
2581	1990	11	11.50784	03	01	40.39	+19	47	01.5	16	898
2581	1990	11	12.54337	03	00	33.89	+19	41	02.8	16	898
2581	1990	11	12.57666	03	00	31.86	+19	40	48.1		898
2957	1990	11	22.50268	03	50	04.49	+22	17	25.6	15.5	898
2957	1990	11	22.54112	03	50	02.83	+22	17	12.8		898
3396	1990	11	11.59491	04	00	21.09	+24	59	54.9	16.5	898
3396	1990	11	11.61739	04	00	19.75	+24	59	57.5		898
3881	1990	11	12.54337	03	02	40.67	+18	41	54.8	15	898
3881	1990	11	12.57666	03	02	38.53	+18	41	51.9		898

* * * * *

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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 Austin (1989c1)

Epoch 1990 Apr. 19.0 ET = JDE 2448000.5

T 1990 Apr. 9.96745 ET

			P	Nakano Q
q	0.3497748	(1950.0)		
z	-0.0006430	Peri.	61.56880	-0.31715256
	+/-0.0000020	Node	75.23083	-0.46159621
				-0.88500397
e	1.0002249	Incl.	58.95530	+0.22865287
				+0.92039780
				+0.06080227

From 144 observations 1989 Dec. 6-1990 June 17, mean residual 0".92.

Comet Skorichenko-George (1989e1)

Epoch 1990 Apr. 19.0 ET = JDE 2448000.5

T 1990 Apr. 11.92934 ET

			P	Nakano Q
q	1.5691747	(1950.0)		
z	-0.0001925	Peri.	137.84025	+0.21764505
	+/-0.0000114	Node	279.30674	-0.48130951
				+0.80540836
e	1.0003020	Incl.	59.36452	+0.49208418
				+0.84290200
				-0.34591694

From 81 observations 1989 Dec. 20-1990 Oct. 30, mean residual 1".07.

Periodic Comet Mueller 3 (1990l)

T 1990 Aug. 1.32179 ET

			P	Nakano Q
q	2.9986296	(1950.0)		
n	0.11396925	Peri.	225.86478	+0.99183938
a	4.2131889	Node	137.35344	-0.06252678
				+0.95506728
e	0.2882755	Incl.	9.43937	+0.09177891
				-0.08849453
				+0.28971864

P 8.65

From 12 observations 1990 Sept. 17-Nov. 23.

Periodic Comet Shoemaker-Levy (1990o)

T 1990 Sept. 18.56904 ET

			P	Marsden Q
q	1.5254767	(1950.0)		
n	0.05536114	Peri.	310.62074	+0.94650051
a	6.8181419	Node	51.32113	+0.01150999
				+0.77655780
e	0.7762621	Incl.	24.40020	+0.19471985
				-0.25733436
				+0.62994087

P 17.80

From 25 observations 1990 Nov. 10-23.

Comet Tsuchiya-Kiuchi (1990i)

Epoch 1990 Sept. 26.0 ET = JDE 2448160.5

T 1990 Sept. 28.74053 ET

			P	Nakano Q
q	1.0924536	(1950.0)		
z	0.0042280	Peri.	180.92235	-0.85980835
	+/-0.0000830	Node	330.04354	+0.41672912
				+0.47216222
e	0.9953811	Incl.	143.77779	+0.86887559
				+0.19440277
				-0.26719291

From 48 observations 1990 July 17-Oct. 30, mean residual 0".98.

Periodic Comet Holt-Olmstead (1990k)

T 1990 Oct. 4.61910 ET

q	2.0426224	(1950.0)	P	Nakano
n	0.16007645	Peri.	2.62777	Q
a	3.3593178	Node	14.62908	-0.28820197
e	0.3919532	Incl.	14.87409	+0.74439765
P	6.16		+0.12823946	+0.60233858

From 31 observations 1990 Sept. 14-Nov. 11.

Comet Levy (1990c)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

T 1990 Oct. 24.68664 ET

q	0.9386718	(1950.0)	P	Nakano
z	-0.0004038	Peri.	242.66485	Q
+/-	0.0000581	Node	138.66325	-0.86830925
e	1.0003791	Incl.	131.58692	+0.46498638
			-0.90639801	-0.17270413

From 334 observations 1990 May 21-Oct. 27, mean residual 0".79. Nongravitational parameters A1 = +2.85 +/- 0.25, A2 = +0.4453 +/- 0.4133.

Periodic Comet Mueller 2 (1990j)

T 1990 Nov. 19.87447 ET

q	2.0828050	(1950.0)	P	Nakano
n	0.15023450	Peri.	171.05274	Q
a	3.5044747	Node	218.12439	-0.48286987
e	0.4056727	Incl.	7.07324	+0.84400193
P	6.56		+0.21191191	+0.23344685

From 21 observations 1990 Sept. 16-Nov. 11.

One-opposition minor planets

Planet	H	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1986 JS	14.0	860420	320.05	141.51	128.21	6.39	0.1539	2.2192	67	7		W
1989 SK5	13.3	891021	37.06	45.24	254.81	5.84	0.3865	2.7010	30	8		N
1990 DW	12.6	900310	88.09	97.85	331.10	6.39	0.0580	2.3888	16	7		N
1990 DS1	13.2	900129	300.15	318.32	263.95	0.96	0.1222	2.3949	9	0	D	a
1990 DD4	12.3	900218	317.27	224.10	341.70	9.36	0.1938	3.1735	6	0	D	N
1990 EP3	13.4	900330	318.99	251.71	331.34	5.55	0.0896	3.1975	48	0	D	E
1990 QB	13.4	900926	333.19	56.74	331.76	21.85	0.2522	2.3330	65	8		E
1990 QG	14.0	900906	342.97	49.05	328.94	6.01	0.3735	3.0213	57	0		B
1990 QY	13.0	900906	46.33	81.30	197.15	8.07	0.2103	3.0234	56	9		W
1990 QA1	14.5	900906	32.92	60.48	238.12	3.15	0.1876	2.3094	55	8		W
1990 QZ1	13.5	900906	251.37	118.63	345.35	7.15	0.0819	2.4005	28	0		E
1990 QB2	14.3	900906	15.75	150.44	171.23	2.09	0.2167	2.3846	29	0		E
1990 QE2	14.1	900906	46.21	310.70	334.75	5.01	0.1607	2.2290	28	7		E
1990 QG2	11.9	900906	291.93	261.74	165.69	14.27	0.0977	3.1309	29	0		E
1990 QH2	14.7	900906	342.01	15.96	355.99	4.54	0.1721	2.3176	29	0		E
1990 QJ2	15.2	900906	324.68	0.38	33.79	1.54	0.1591	2.1908	28	0		E
1990 QL2	13.5	900906	331.51	224.39	159.55	5.13	0.1299	2.2626	29	8		E
1990 QN2	14.1	900906	19.70	335.76	345.97	7.12	0.1368	2.3585	29	0		E
1990 QU2	15.7	900906	3.82	176.77	163.82	7.60	0.2472	2.2114	27	8		E
1990 QV2	12.6	900906	33.29	131.99	177.28	10.20	0.1156	3.0044	27	8		E
1990 QC3	14.5	900817	329.64	217.95	162.07	3.32	0.1732	2.2701	8	7		M
1990 QD3	15.0	900906	1.34	6.13	337.19	6.21	0.1838	2.1597	52	0		W
1990 QH3	14.5	900906	5.08	355.31	341.26	17.24	0.2867	2.6939	52	0		W
1990 QJ3	13.0	900906	302.55	71.51	348.72	12.63	0.1499	2.9054	28	9		E
1990 QM3	15.0	900906	349.48	9.10	352.16	7.17	0.1463	2.3251	29	0		E
1990 QO3	12.5	900906	308.52	48.44	354.13	10.64	0.0745	3.1291	66	0		B
1990 QP3	13.0	900906	0.78	245.67	97.37	2.55	0.1804	3.1575	60	0		B
1990 QA4	14.0	900817	100.33	251.55	337.59	4.89	0.0458	2.3251	28	0		W

1990	QB4	12.5	900817	266.59	275.49	157.20	6.72	0.0236	3.1700	28 0	W
1990	QE4	14.1	900906	2.31	180.47	156.82	14.30	0.2828	2.5769	21 8	E
1990	QF4	13.0	900817	232.64	318.32	150.19	7.24	0.0642	2.3533	33 0	W
1990	QH4	15.5	900817	352.03	358.27	346.26	4.50	0.1895	2.2300	28 0	W
1990	QJ4	14.4	900906	44.05	123.96	155.56	2.45	0.1945	2.4128	26 8	E
1990	QK4	14.8	900906	349.20	202.91	156.69	2.66	0.2180	2.3851	26 8	E
1990	QL4	12.2	900906	119.69	230.70	349.82	10.32	0.0204	3.0003	21 8	E
1990	QO4	13.5	900817	32.64	306.05	353.85	9.47	0.0845	2.9957	26 0	W
1990	QP4	15.0	900817	13.60	329.19	347.23	2.45	0.1787	2.3741	30 0	W
1990	QC5	13.7	900906	59.39	252.86	12.31	3.51	0.1619	2.2238	26 0	E
1990	QE5	14.4	900906	24.41	311.09	359.70	6.65	0.1301	2.3594	26 0	E
1990	QF5	12.0	900817	96.01	244.82	351.56	15.38	0.0624	3.1911	26 0	W
1990	QO5	14.5	900817	35.45	214.02	73.94	1.70	0.1216	2.3336	13 0	M
1990	QR5	13.0	900817	26.48	172.32	125.36	2.61	0.1787	3.1841	33 0	W
1990	QW5	14.0	900817	325.54	43.56	332.86	14.52	0.1122	2.6236	13 0	M
1990	QX5	14.5	900817	318.55	70.33	331.82	12.16	0.2728	2.7007	13 0	M
1990	QY5	14.0	900817	343.49	25.88	332.29	12.70	0.1876	2.6913	13 0	M
1990	QZ5	13.0	900906	311.28	244.65	159.32	12.90	0.1560	2.8595	27 7	E
1990	QA6	14.5	900817	334.88	18.25	349.96	4.22	0.1790	2.2795	33 0	W
1990	QC6	14.5	900817	307.26	316.23	92.04	0.69	0.1845	2.3302	29 0	W
1990	QJ6	14.0	900817	11.22	247.69	73.83	0.59	0.1942	3.0551	29 8	W
1990	QC7	13.5	900817	326.36	274.39	110.16	0.51	0.1267	3.1785	25 8	M
1990	QN7	14.0	900817	54.38	226.34	37.50	2.71	0.1937	2.3801	25 8	M
1990	QY7	14.0	900817	184.39	177.62	331.78	4.21	0.0481	2.1679	28 8	W
1990	QD8	13.5	900817	347.64	201.56	150.38	6.01	0.1554	3.1915	33 0	W
1990	QX8	13.5	900817	343.21	337.42	17.19	2.12	0.0711	2.8949	33 0	W
1990	QA9	14.0	900817	14.10	235.91	73.13	2.22	0.2717	3.1283	33 0	W
1990	QE9	13.5	900906	301.87	52.45	352.53	1.71	0.0587	2.8686	35 0	N
1990	QT9	14.5	900817	39.74	167.83	116.73	1.55	0.1324	2.1991	26 9	W
1990	QU9	12.6	900906	50.59	289.86	351.82	15.96	0.0993	3.1246	23 6	E
1990	RE	13.0	900817	317.96	231.22	159.64	11.68	0.1014	3.0999	30 0	M
1990	SL	13.5	901016	33.42	222.37	76.56	24.85	0.2841	2.3627	63 6	W
1990	SN1	13.5	900926	338.08	172.85	225.35	4.33	0.1435	2.2412	30 0	M
1990	SB2	14.5	900926	330.07	268.02	153.72	20.16	0.3494	2.4027	27 9	W
1990	SJ2	14.0	901016	346.63	318.13	79.55	4.74	0.1636	2.2106	28 0	N
1990	SO2	14.2	901016	51.41	193.71	111.42	6.90	0.2223	2.3062	36 0	N
1990	SS3	13.9	900926	344.90	34.81	1.92	11.35	0.3074	2.6792	62 0	N
1990	SX3	13.0	900926	1.67	60.23	307.73	12.34	0.2153	2.5855	25 8	W
1990	SY3	13.0	900926	7.63	84.94	274.78	11.11	0.1985	2.6656	27 6	W
1990	SZ3	13.0	900926	342.78	94.60	301.15	11.65	0.1724	2.6639	27 7	W
1990	SC4	13.0	900926	312.64	245.55	189.86	22.06	0.2820	2.3834	24 8	W
1990	SE4	13.7	900926	18.21	134.05	214.97	1.10	0.0436	2.6960	25 6	k
1990	SF4	13.0	900926	50.20	55.80	229.82	10.60	0.2242	2.5467	24 8	W
1990	SG4	13.5	900926	37.16	4.51	278.53	5.56	0.3887	2.3082	24 8	W
1990	SO4	12.5	901016	25.61	51.74	299.37	8.03	0.1773	2.3021	41 8	U
1990	ST4	15.0	900926	349.49	195.50	176.47	5.15	0.3326	2.5946	32 0	W
1990	TH	16.0	900926	19.91	154.82	179.62	3.78	0.3090	2.4021	4 3	E W
1990	TK	15.5	900926	48.45	294.03	24.31	23.41	0.0852	1.9907	4 8	W
1990	TM	12.5	900926	264.20	332.19	168.96	6.87	0.2317	2.8176	4 4	W
1990	TO	14.0	901016	18.06	287.10	69.45	5.63	0.1897	2.2762	50 0	W
1990	TP	13.9	901016	24.45	218.07	131.73	3.98	0.1692	2.2652	8 7	N
1990	TQ	14.6	901016	356.06	26.76	355.67	6.19	0.2638	2.2073	7 7	N
1990	TT	12.0	901016	352.98	21.84	11.32	8.12	0.0706	2.7604	12 6	N
1990	TV	13.2	901016	16.54	313.02	41.57	1.50	0.2729	2.8210	12 8	N
1990	TW	11.3	901016	26.76	305.49	48.34	12.91	0.2031	2.5966	59 0	N
1990	TY	14.0	901016	311.31	272.86	183.35	21.66	0.2551	2.3091	24 0	W
1990	TZ	11.0	901016	302.53	226.63	239.91	22.04	0.2682	2.4253	36 7	W
1990	TB1	13.1	901016	66.21	303.79	359.11	7.66	0.1437	2.2762	11 8	N
1990	TC1	14.4	901016	8.63	166.86	207.40	4.07	0.1957	2.2328	30 0	N

1990	TD1	13.7	901105	18.05	310.15	59.25	4.60	0.1961	2.3183	27	9	N
1990	TF1	18.0	901016	12.92	158.06	198.31	22.51	0.2846	2.2280	11	0	M
1990	TH1	18.0	901016	44.58	112.44	204.46	27.02	0.2329	1.7930	10	0	M
1990	TJ1	13.2	901016	358.43	315.40	76.10	3.76	0.2005	2.2819	26	6	N
1990	TM1	10.7	901016	63.03	240.26	86.34	6.59	0.0581	3.2559	29	0	N
1990	TO1	14.0	901016	351.23	155.28	230.37	19.70	0.0847	1.9469	36	7	W
1990	TQ1	14.9	901016	10.67	241.35	123.13	6.02	0.1777	2.2735	8	6	N
1990	TH3	12.7	901016	14.72	317.34	53.57	12.61	0.2156	2.7581	9	6	N
1990	TJ3	13.3	901016	358.06	305.72	89.76	4.75	0.1291	2.2064	29	8	N
1990	TK3	12.6	901016	1.48	1.53	31.99	17.11	0.1723	2.5846	31	0	N
1990	TN3	14.0	901016	4.76	5.37	20.64	20.81	0.0931	1.9596	35	8	M
1990	TO3	14.0	900926	94.13	69.28	216.17	1.24	0.0426	2.8499	6	6	M
1990	TP3	16.5	901105	18.26	2.84	3.01	2.99	0.2286	2.5006	6	6	S
1990	TQ3	14.5	901105	321.07	62.99	23.47	10.30	0.1658	3.1560	6	6	S
1990	TR3	16.5	901105	26.25	36.94	318.54	1.50	0.2077	2.3878	6	6	S
1990	TS3	15.5	901105	16.92	156.16	218.73	4.25	0.0672	2.3078	6	6	S
1990	TT3	16.5	901105	33.72	333.26	15.82	5.59	0.1632	2.2541	6	6	S
1990	TV3	17.5	901105	26.36	124.78	226.12	1.00	0.2718	2.1504	6	6	S
1990	TW3	15.0	901105	349.68	196.18	211.23	5.01	0.1003	2.3082	6	6	S
1990	TX3	16.0	901105	336.19	47.24	20.59	7.16	0.1649	2.7421	6	6	S
1990	TY3	16.5	901105	30.98	337.43	16.86	5.75	0.1451	2.2579	6	6	S
1990	TZ3	14.5	901105	31.89	122.81	218.65	0.83	0.2570	3.1309	6	6	E M
1990	TA4	14.0	901105	55.18	109.82	211.83	14.06	0.1666	2.6111	6	6	S
1990	TB4	14.5	901105	334.71	141.02	283.41	1.23	0.0828	2.5614	6	6	S
1990	TC4	14.0	901105	289.49	252.81	225.21	1.70	0.1210	3.0216	6	6	E M
1990	TD4	16.5	901105	328.50	51.59	25.59	5.25	0.1475	2.2481	6	6	S
1990	TF4	14.5	901105	294.41	190.74	282.22	1.39	0.1130	2.3880	6	6	S
1990	TG4	14.0	901105	78.25	290.30	5.29	0.65	0.1746	3.2235	6	5	E M
1990	TH4	16.0	901105	31.53	345.11	7.48	2.55	0.1545	2.6771	6	6	S
1990	TJ4	15.5	900926	59.44	87.60	217.07	1.82	0.1760	2.4266	6	6	E M
1990	TK4	15.5	901105	306.81	230.69	228.45	2.90	0.1074	2.3189	6	6	E M
1990	TL4	11.5	901016	37.26	51.92	277.29	8.11	0.1705	2.8022	36	7	W
1990	TT4	13.5	901016	358.62	233.62	163.02	10.85	0.2180	3.1561	31	7	W
1990	TD7	16.5	901016	342.59	35.43	23.54	3.94	0.2196	2.3884	4	4	M
1990	TE7	13.5	901016	20.68	157.28	210.34	8.33	0.1253	2.9672	4	4	M
1990	TF7	16.5	901016	32.11	115.45	221.83	4.11	0.2747	2.5042	4	4	M
1990	TH7	14.0	901016	59.02	309.16	6.84	1.05	0.1866	3.1682	4	4	E M
1990	TJ7	16.5	901016	13.54	168.94	199.84	3.31	0.2391	2.4327	4	4	M
1990	TK7	13.5	901016	55.79	283.89	35.00	16.70	0.1944	3.2323	4	4	E M
1990	TL7	14.5	901016	290.70	275.74	213.92	1.34	0.2182	2.9773	4	4	E M
1990	TM7	13.0	901016	83.36	267.33	30.07	7.43	0.1194	2.4361	4	4	M
1990	TN7	14.5	901016	311.28	266.69	209.45	4.57	0.3079	2.7516	4	4	M
1990	TO7	15.5	901016	40.77	291.59	29.24	10.44	0.3072	2.3247	4	4	M
1990	TP7	15.0	901016	351.95	37.86	7.81	1.34	0.1077	3.0039	4	4	M
1990	TQ7	14.5	901016	266.21	114.08	25.52	3.09	0.0886	2.7137	4	4	E M
1990	TR7	13.5	901016	273.33	257.79	235.94	1.12	0.0955	2.8611	4	4	E M
1990	TS7	14.5	901016	289.50	276.33	214.41	2.89	0.2323	2.1894	4	4	E M
1990	TV7	13.5	901016	41.67	310.04	42.41	1.57	0.0324	3.2196	4	4	E M
1990	TW7	15.0	901016	343.86	22.01	35.49	5.94	0.2206	2.3407	4	4	M
1990	TY7	15.5	901016	264.85	112.09	25.89	2.90	0.0698	2.4083	4	4	E M
1990	TZ7	14.5	901016	284.95	276.04	214.49	0.68	0.1651	3.0453	4	4	E M
1990	TA8	14.5	901016	65.07	100.47	219.33	8.81	0.1071	3.0798	4	4	E M
1990	TD8	13.0	901016	308.23	316.10	160.39	0.74	0.2656	3.1657	4	4	E M
1990	TE8	14.0	901016	280.47	56.93	59.45	2.84	0.0129	2.6874	4	4	M
1990	TF8	14.5	901016	300.18	259.28	216.52	14.06	0.1914	2.5446	4	4	M
1990	TG8	13.5	901016	313.21	72.19	38.03	18.93	0.2668	3.2151	4	4	E M
1990	TH8	15.0	901016	300.43	309.53	177.35	1.34	0.2915	2.4021	4	4	M
1990	TJ8	14.5	901016	146.99	195.08	43.61	6.92	0.1829	2.1898	4	4	E M

1990	TK8	14.0	901016	87.79	250.31	42.51	10.59	0.1460	3.1789	4	4	E	M
1990	TY8	13.5	900926	339.81	45.69	352.21	5.73	0.1573	2.6824	5	9		M
1990	TD11	17.0	900926	324.82	159.69	257.45	1.66	0.1813	2.1722	3	5	E	M
1990	TE11	16.0	900926	9.06	24.67	325.55	2.98	0.2908	2.5623	3	4		M
1990	TF11	15.0	900926	272.05	145.32	317.13	3.48	0.0436	2.4491	3	5		M
1990	TG11	14.5	900926	96.82	337.70	276.76	2.59	0.1667	2.3469	3	5		M
1990	TH11	12.0	900926	226.55	157.84	3.92	19.50	0.2598	3.0380	3	5	E	M
1990	TJ11	15.5	900926	44.23	318.74	354.80	4.52	0.1175	2.1843	3	5	E	M
1990	TK11	15.5	900926	27.12	91.58	231.88	2.42	0.2491	2.6529	3	5		M
1990	TL11	15.5	900926	349.05	95.06	288.24	1.88	0.1346	2.6729	3	5		M
1990	TM11	14.5	900926	73.09	269.80	0.32	12.35	0.2343	2.5903	3	5		M
1990	TN11	15.5	900926	356.05	155.71	218.65	4.05	0.1888	2.6885	3	5		M
1990	TO11	14.5	900926	56.63	321.98	332.88	2.53	0.1692	2.8302	3	5		M
1990	TP11	13.5	900926	127.04	358.09	230.48	4.38	0.1902	3.0157	3	5	E	M
1990	TQ11	15.5	900926	294.67	259.56	209.18	4.77	0.2938	2.6807	2	4	E	M
1990	TR11	15.5	900926	0.17	58.68	309.84	2.37	0.2419	2.8075	3	5		M
1990	TS11	16.0	900926	46.20	56.44	238.17	2.10	0.2733	2.5875	3	5		M
1990	TT11	14.5	900926	56.54	286.58	359.84	10.00	0.2451	2.5694	3	5	E	M
1990	TU11	15.0	900926	300.44	115.92	333.02	2.06	0.1840	2.4573	3	5		M
1990	TV11	14.5	900926	32.80	13.90	309.95	1.66	0.1671	2.5280	3	5		M
1990	TW11	15.0	900926	331.37	65.74	347.57	2.78	0.2205	2.6974	3	5		M
1990	TX11	14.5	900926	342.62	107.35	285.35	1.81	0.1516	2.4261	3	5		M
1990	TZ11	17.5	900926	342.80	128.15	270.89	1.47	0.2936	2.1696	3	5	E	M
1990	TA12	17.5	900926	21.07	342.06	346.63	2.80	0.2896	2.1766	3	5	E	M
1990	TB12	12.5	900926	310.31	133.80	308.65	2.16	0.2115	3.8885	3	5	E	M
1990	TC12	17.0	900926	342.94	30.48	1.72	5.71	0.1587	2.2300	3	5		M
1990	TD12	15.0	900926	330.18	159.36	255.69	2.61	0.2148	2.5786	3	5		M
1990	TE12	16.0	900926	347.38	159.76	232.68	2.74	0.2789	2.9716	3	5		M
1990	TF12	16.0	900926	347.96	25.43	1.76	6.98	0.2150	2.1760	3	5	E	M
1990	TG12	14.5	900926	183.11	333.15	215.95	3.54	0.2080	2.3389	3	5		M
1990	TH12	14.0	901016	294.83	265.19	243.17	4.58	0.3095	2.3017	4	5		M
1990	TJ12	13.5	901016	93.27	7.09	305.24	1.12	0.0592	3.0001	4	5	E	M
1990	TL12	15.5	901016	353.40	150.49	263.13	3.54	0.0700	2.1890	4	5	E	M
1990	TM12	14.0	901016	114.64	290.66	355.52	2.13	0.1140	2.7485	4	5	E	M
1990	TN12	15.0	901016	43.79	13.39	335.28	2.59	0.1553	2.3137	4	5		M
1990	TO12	14.5	901016	17.04	32.08	354.49	2.27	0.1386	2.7446	4	5		M
1990	TP12	11.5	901016	70.97	287.49	48.32	17.17	0.1078	5.2378	4	5	E	M
1990	TQ12	13.8	901016	343.71	175.13	255.28	4.68	0.2135	2.3613	32	8	D	N
1990	TR12	13.0	901016	80.26	81.01	239.94	9.11	0.0977	2.9166	4	5	E	M
1990	TS12	14.5	901016	86.63	31.25	272.54	3.58	0.1602	2.2199	4	5	E	M
1990	TT12	12.2	901125	95.58	317.66	0.55	1.56	0.0604	2.9092	38	8		N
1990	TU12	15.0	901016	49.09	352.85	356.38	2.47	0.1305	2.7310	4	5		M
1990	TV12	11.0	901016	53.94	117.41	241.95	24.43	0.0565	5.1618	4	5	E	M
1990	TW12	13.5	901105	2.48	13.63	38.43	13.63	0.1741	2.6923	30	8		N
1990	TX12	12.5	901016	291.54	261.79	238.53	9.90	0.1714	2.8547	4	5		M
1990	TZ12	14.5	901016	57.45	318.42	0.80	3.32	0.2705	2.1969	4	5	E	M
1990	TA13	12.5	901016	287.32	93.94	38.36	10.73	0.0478	3.0197	4	5		M
1990	UB	13.8	901016	332.23	140.86	284.69	3.19	0.1703	2.2787	30	9		N
1990	UC	14.0	901105	15.70	190.19	181.88	8.12	0.2131	2.3397	36	0		W
1990	UG	12.4	901105	346.83	198.67	205.27	12.08	0.0105	2.9345	29	9		N
1990	UK	12.8	901105	5.97	336.96	50.19	15.81	0.1080	2.6222	21	8		N
1990	UM	14.0	901105	9.87	304.42	70.53	10.89	0.3118	2.7631	33	0		U
1990	UT	14.4	901016	342.69	350.41	57.34	2.27	0.1729	2.2438	6	4		N
1990	UV	14.7	901016	341.07	319.52	84.94	7.11	0.1360	2.4107	6	5		N
1990	UZ	11.7	901105	45.75	259.36	85.69	11.35	0.1173	3.0177	29	0		N
1990	UA1	12.1	901105	318.78	219.90	236.32	12.00	0.1280	2.6673	36	0		N
1990	UB1	11.7	901105	358.82	14.96	32.40	14.71	0.1440	3.1503	36	0		N
1990	UC1	14.0	901016	49.15	302.39	8.30	10.11	0.2151	2.3827	15	7		M

1990	UD1	13.7	901105	30.16	39.03	319.94	2.81	0.2072	3.0083	24	9	N
1990	UF1	13.4	901016	33.55	287.51	59.76	3.80	0.1864	2.1776	22	6	N
1990	UH1	13.5	901016	358.69	306.64	90.70	9.55	0.2441	2.3635	56	6	W
1990	UJ1	13.0	901016	334.57	197.01	225.73	13.15	0.1574	2.6817	22	0	W
1990	UL1	14.5	901016	6.90	277.92	107.04	4.44	0.1871	2.2658	12	9	M
1990	UN1	13.8	901105	342.73	264.12	167.61	5.10	0.2094	2.3653	24	8	N
1990	UO1	13.7	901016	13.80	252.80	126.69	5.17	0.1635	2.5818	24	6	N
1990	UP1	14.0	901016	347.03	358.46	55.24	9.08	0.1782	2.2885	28	9	M
1990	UA2	14.5	901105	3.87	279.07	113.48	4.34	0.2627	2.5656	20	6	U
1990	UB2	13.5	901105	63.57	220.47	90.44	5.62	0.2180	2.2244	20	6	U
1990	UC2	14.0	901016	14.65	276.56	81.41	9.36	0.1633	2.4638	15	7	M
1990	UD2	13.3	901105	262.83	118.31	48.78	10.58	0.2893	2.5043	4	4	E N
1990	UE2	15.1	901105	19.38	165.42	207.04	4.53	0.2405	2.4001	18	8	N
1990	UF2	13.6	901105	269.44	316.82	205.63	7.34	0.2853	2.3523	3	4	E N
1990	UG2	13.0	901016	11.09	271.05	110.16	11.07	0.1181	3.0297	20	6	W
1990	UL2	13.5	901105	357.02	348.29	62.61	5.32	0.1310	2.2004	22	0	N
1990	UM2	11.7	901016	48.46	273.05	62.78	11.16	0.1217	3.0238	23	6	N
1990	UN2	14.0	901105	84.16	257.42	52.98	6.78	0.0908	2.3492	18	6	N
1990	UO2	12.5	901016	352.42	162.00	236.60	23.63	0.2236	2.3550	4	3	W
1990	UP2	11.0	901105	289.01	164.57	307.21	16.72	0.0862	5.2837	21	5	W
1990	UQ2	13.3	901105	25.66	325.72	43.36	8.57	0.2200	2.3942	19	0	N
1990	UT2	18.0	901016	4.97	87.41	275.72	5.51	0.2447	2.2313	6	9	M
1990	UU2	18.0	901016	58.85	62.38	252.17	1.95	0.1449	2.1339	4	0	M
1990	UW2	12.5	901016	40.90	256.94	86.11	6.38	0.1647	3.1594	4	7	M
1990	UX2		901016	174.78	28.17	167.13	1.43	0.1036	2.9394	4	6	E B
1990	UA3	15.4	901016	20.54	94.80	254.61	2.57	0.3498	2.3482	36	5	N
1990	UB3	13.7	901016	317.14	101.48	353.26	2.40	0.1707	2.2825	36	6	N
1990	UC3	11.8	901016	227.36	263.26	282.59	4.65	0.1590	2.8064	36	6	N
1990	UG3	13.4	901105	353.90	359.38	57.88	6.40	0.3132	2.5798	29	0	N
1990	UK3	11.6	901105	53.78	61.50	252.62	8.21	0.2519	2.9267	26	0	N
1990	VC	14.5	901105	64.77	68.26	232.24	11.32	0.2769	2.5968	2	6	W
1990	VE	11.8	901105	358.26	347.80	68.63	8.45	0.1352	2.8669	3	8	E N
1990	VM	13.5	901016	5.21	272.99	115.41	8.72	0.1611	3.1711	21	9	W
1990	VA1	14.0	901125	6.52	20.21	30.57	4.72	0.1684	2.2063	11	8	N
1990	VC1	12.5	901105	341.28	318.29	104.05	12.40	0.2931	2.9974	5	5	W
1990	VE1	13.5	901016	29.44	220.13	138.00	14.44	0.1648	2.6222	46	5	W
1990	VF1	14.5	901105	235.14	79.76	109.94	26.44	0.0956	1.8674	14	6	W
1990	VH1	12.1	901105	243.23	116.65	47.86	12.85	0.1377	2.4005	9	8	N
1990	VL1	13.3	901125	47.68	107.69	238.53	8.90	0.2143	2.5806	12	0	N
1990	VM1	14.3	901125	9.43	162.78	239.03	9.09	0.2358	2.3541	13	0	N
1990	VN1	12.7	901125	18.73	347.70	45.69	8.93	0.1072	2.6316	13	0	N
1990	VO1	14.3	901125	352.69	195.47	235.06	1.68	0.2274	2.3510	12	0	N
1990	VU1	8.5	901125	73.03	251.46	69.46	24.76	0.2175	5.2005	13	0	E N
1990	VW1	13.9	901105	349.07	175.25	255.28	4.68	0.2136	2.3616	41	0	N
1990	VX1	14.1	901125	33.03	123.51	248.66	1.66	0.2105	2.2386	11	8	N
1990	VD2	11.8	901105	337.68	244.43	194.83	0.84	0.1095	3.0714	5	9	E N
1990	VL2	13.2	901125	344.97	307.54	130.31	3.40	0.1093	2.5198	11	0	N
1990	VM2	13.3	901105	18.40	280.02	104.00	4.49	0.2133	2.6689	10	6	N
1990	VO2	13.6	901105	334.38	103.05	336.61	3.89	0.2404	2.3327	6	8	N
1990	VS2	13.5	901105	61.70	201.78	135.33	5.93	0.1531	2.5948	6	6	M
1990	VW2	15.0	901105	15.62	174.24	209.81	2.18	0.1684	2.1226	9	0	N
1990	VX2	12.5	901105	338.03	42.02	52.62	24.04	0.2882	2.4124	7	0	B
1990	VY2	12.5	901125	57.12	336.30	3.88	4.13	0.1776	2.5307	13	9	N
1990	VA3	13.5	901016	46.29	1.79	337.97	1.89	0.1983	2.2615	41	0	B
1990	VD3	13.7	901105	187.12	304.15	273.83	3.50	0.0638	2.3611	13	4	N
1990	VF3	13.2	901125	66.71	231.77	105.11	4.41	0.1485	2.2253	13	0	N
1990	VJ3	11.5	901125	347.72	168.73	264.09	8.83	0.0728	3.0082	10	6	N
1990	VM3	14.0	901105	24.61	295.95	76.90	19.68	0.2634	2.6194	2	6	E M

1990 VQ3	11.4	901125	204.80	333.99	240.51	12.30	0.1083	2.6190	10 6	N
1990 VR3	12.0	901105	1.38	7.56	43.03	7.83	0.1752	3.1752	10 7	W
1990 VS3	15.2	901105	356.26	351.80	60.13	5.43	0.1156	2.2507	3 6	E N
1990 VT3	15.8	901105	31.02	128.57	219.12	5.52	0.3287	2.4700	3 6	E N
1990 VU3	14.7	901105	18.98	225.20	150.78	1.20	0.2506	2.9414	3 6	E N
1990 VV3	13.3	901105	78.25	339.12	344.19	1.84	0.0486	2.2038	12 7	N
1990 VW3	13.9	901105	357.46	5.41	45.56	4.95	0.1344	2.2784	12 9	E N
1990 VX3	12.7	901105	254.71	130.33	39.59	3.67	0.1510	2.3018	12 7	E N
1990 VY3	14.2	901125	19.93	135.84	248.30	3.63	0.2341	2.4029	12 8	N
1990 VE4	14.0	901125	352.12	22.59	51.41	9.25	0.2297	2.4685	7 6	U
1990 VG4	13.1	901125	349.05	224.62	209.68	6.96	0.1698	2.5553	10 6	N
1990 VH4	13.3	901125	337.78	27.83	60.95	1.64	0.2348	2.9085	9 6	N
1990 WC	13.0	901016	339.34	345.89	67.87	10.43	0.2692	2.7367	40 7	M
1990 WE	12.4	901125	316.08	3.25	91.49	8.96	0.2053	2.7336	4 5	N

1990 DS1 = 1990 EP7 (A. Lowe)

1990 DD4 = 1990 DZ4 (S. Nakano)

1990 EP3 = 1990 GJ (S. Nakano, MPC 16553)

1990 TQ12 = 1990 VW1 (S. Nakano)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (159) Aemilia Obs. 83 M 311.61246 Peri. 339.06327
 H 8.12 G 0.15 Opp. 32 n 0.18052661 Node 133.79320
 rms res. 0".95 (M-P) 1904-1989 e 0.1087475 Incl. 6.13081
 Bowell

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (163) Erigone Obs. 178 M 257.44496 Peri. 297.38550
 H 9.47 G -0.04 Opp. 43 n 0.27060403 Node 159.78077
 rms res. 1".0 (M-N) 1876-1990 e 0.1918015 Incl. 4.80466
 Goffin

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (166) Rhodope Obs. 72 M 291.67885 Peri. 263.15299
 H 9.89 G 0.15 Opp. 16 n 0.22379818 Node 128.79112
 rms res. 1".02 (M-P) 1909-1989 e 0.2110095 Incl. 12.02054
 Bowell

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (208) Lacrimosa Obs. 94 M 122.36259 Peri. 112.63078
 H 8.96 G 0.15 Opp. 28 n 0.20033522 Node 4.20439
 rms res. 0".93 (M-P) 1916-1987 e 0.0107225 Incl. 1.74803
 Bowell

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (310) Margarita Obs. 128 M 280.94271 Peri. 322.78110
 H 10.3 G 0.15 Opp. 35 n 0.21455412 Node 229.24878
 rms res. 1".1 (M-N) 1891-1989 e 0.1145291 Incl. 3.16384
 Goffin

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (331) Etheridgea Obs. 82 M 122.00427 Peri. 337.46689
 H 9.62 G 0.15 Opp. 26 n 0.18684609 Node 21.75870
 rms res. 0".98 (M-P) 1917-1989 e 0.0968952 Incl. 6.04494
 Bowell

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (386) Siegena Obs. 118 M 347.21887 Peri. 219.07987
 H 7.43 G 0.16 Opp. 31 n 0.19988653 Node 166.47844
 rms res. 0".83 (M-P) 1911-1990 e 0.1684867 Incl. 20.27338
 Bowell

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (414) Liriope Obs. 47 M 197.56794 Peri. 329.60061
 H 9.49 G 0.15 Opp. 16 n 0.15062840 Node 110.80134
 rms res. 0".82 (M-P) 1907-1986 e 0.0832860 Incl. 9.58487
 Bowell

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (477) Italia	Obs. 101	M 275.97889	Goffin
H 10.25 G 0.15	Opp. 31	n 0.26271695	Peri. 322.23946
rms res. 1".1 (M-N) 1901-1990		e 0.1905032	Node 10.16059
			Incl. 5.29391
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (506) Marion	Obs. 45	M 230.81144	Bowell
H 8.85 G 0.15	Opp. 16	n 0.18537730	Peri. 146.86354
rms res. 0".92 (M-P) 1927-1988		e 0.1405130	Node 312.68272
			Incl. 16.97999
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (536) Merapi	Obs. 65	M 319.28189	Bowell
H 8.08 G 0.15	Opp. 24	n 0.15054297	Peri. 304.98395
rms res. 0".96 (M-P) 1913-1989		e 0.0889537	Node 59.11779
			Incl. 19.43441
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (604) Tekmessa	Obs. 44	M 126.06558	Bowell
H 9.2 G 0.15	Opp. 23	n 0.17715291	Peri. 31.15837
rms res. 1".06 (M-P) 1911-1988		e 0.2038576	Node 11.66967
			Incl. 4.42484
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (700) Auravictrix	Obs. 40	M 99.92803	Bowell
H 11.2 G 0.15	Opp. 17	n 0.29599412	Peri. 101.32920
rms res. 0".87 (M-P) 1913-1987		e 0.1034341	Node 96.41880
			Incl. 6.79164
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (824) Anastasia	Obs. 38	M 262.22768	Bowell
H 10.41 G 0.15	Opp. 19	n 0.21107055	Peri. 141.31322
rms res. 0".92 (M-P) 1913-1990		e 0.1346191	Node 141.18160
			Incl. 8.12273
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (908) Buda	Obs. 38	M 139.71655	Bowell
H 10.69 G 0.15	Opp. 12	n 0.25338442	Peri. 24.08657
rms res. 0".90 (M-P) 1918-1990		e 0.1464652	Node 85.15379
			Incl. 13.38214
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (992) Swasey	Obs. 51	M 171.70796	Williams
H 10.8 G 0.15	Opp. 14	n 0.18757717	Peri. 345.26584
rms res. 1".45 (M-P) 1922-1990		e 0.0944780	Node 211.97739
			Incl. 10.86657
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1029) La Plata	Obs. 63	M 242.71638	Bowell
H 10.88 G 0.15	Opp. 16	n 0.20075305	Peri. 141.95288
rms res. 0".82 (M-P) 1949-1988		e 0.0283026	Node 29.74539
			Incl. 2.43310
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1043) Beate	Obs. 101	M 266.02355	Bowell
H 9.79 G 0.15	Opp. 19	n 0.18137579	Peri. 166.96665
rms res. 0".97 (M-P) 1925-1990		e 0.0478177	Node 159.03412
			Incl. 8.92005
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1111) Reinmuthia	Obs. 97	M 269.96373	Bowell
H 10.67 G 0.15	Opp. 21	n 0.19035025	Peri. 231.59932
rms res. 0".82 (M-P) 1927-1989		e 0.1016758	Node 132.25145
			Incl. 3.88800
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1228) Scabiosa	Obs. 61	M 148.01499	Bowell
H 11.5 G 0.15	Opp. 16	n 0.21382998	Peri. 210.17800
rms res. 0".82 (M-P) 1931-1989		e 0.0390289	Node 307.67558
			Incl. 3.28131

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5						Bowell	
(1237) Genevieve		Obs.	31	M	41.77902	Peri.	305.76655
H 10.91	G 0.15	Opp.	16	n	0.23347963	Node	57.55989
rms res. 0".99	(M-P)	1933-1986		e	0.0763882	Incl.	9.71356
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5						Bowell	
(1320) Impala		Obs.	26	M	318.20035	Peri.	205.88374
H 10.4	G 0.15	Opp.	10	n	0.19122413	Node	71.61801
rms res. 0".98	(M-P)	1934-1987		e	0.2345472	Incl.	19.86247
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5						Fileenko	
(1344) Caubeta		Obs.	49	M	185.19006	Peri.	133.08444
H 12.8	G 0.15	Opp.	13	n	0.29251324	Node	59.65465
rms res. 1".99	(M-P)	1935-1987		e	0.1201556	Incl.	5.65759
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5						Fileenko	
(1349) Bechuana		Obs.	68	M	288.40705	Peri.	307.28369
H 10.2	G 0.15	Opp.	21	n	0.18806605	Node	306.78689
rms res. 1".21	(M-P)	1934-1989		e	0.1513521	Incl.	10.06110
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5						Sumzina	
(1360) Tarka		Obs.	26	M	5.68949	Peri.	287.14443
H 11.0	G 0.15	Opp.	11	n	0.23068795	Node	331.14237
rms res. 1".99	(M-P)	1935-1983		e	0.2174829	Incl.	22.77728
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5						Sumzina	
(1372) Haremari		Obs.	50	M	306.77163	Peri.	87.39670
H 12.2	G 0.15	Opp.	14	n	0.21401040	Node	327.20275
rms res. 1".71	(M-P)	1928-1988		e	0.1459146	Incl.	16.44717
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5						Sumzina	
(1376) Michelle		Obs.	75	M	251.85795	Peri.	155.83743
H 12.2	G 0.15	Opp.	17	n	0.29648796	Node	162.98347
rms res. 1".48	(M-P)	1948-1988		e	0.2159416	Incl.	3.55152
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5						Sumzina	
(1396) Outeniqua		Obs.	57	M	68.12565	Peri.	266.15836
H 12.0	G 0.15	Opp.	20	n	0.29249193	Node	359.12591
rms res. 1".75	(M-P)	1933-1989		e	0.1655699	Incl.	4.49286
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5						Sumzina	
(1407) Lindelof		Obs.	72	M	292.04694	Peri.	108.52012
H 10.6	G 0.15	Opp.	18	n	0.21455910	Node	269.02915
rms res. 1".23	(M-P)	1905-1985		e	0.2836031	Incl.	5.78353
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5						Sumzina	
(1408) Trusanda		Obs.	60	M	348.63307	Peri.	180.75106
H 11.0	G 0.15	Opp.	15	n	0.17946767	Node	201.44297
rms res. 1".45	(M-P)	1936-1988		e	0.0836748	Incl.	8.31304
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5						Sumzina	
(1409) Isko		Obs.	87	M	207.81700	Peri.	204.80505
H 10.6	G 0.15	Opp.	20	n	0.22519752	Node	177.26968
rms res. 1".23	(M-P)	1900-1987		e	0.0576167	Incl.	6.69794
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5						Sumzina	
(1419) Danzig		Obs.	44	M	151.63942	Peri.	232.17384
H 11.3	G 0.15	Opp.	18	n	0.28393845	Node	213.11528
rms res. 1".77	(M-P)	1917-1984		e	0.1471161	Incl.	5.72458

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1420) Radcliffe	Obs. 65	M 19.03166	Sumzina
H 11.5 G 0.15	Opp. 18	n 0.21628585	Peri. 71.02780
rms res. 1".69 (M-P) 1931-1988		e 0.0767902	Node 260.77824
			Incl. 3.48117
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1421) Esperanto	Obs. 62	M 356.72358	Sumzina
H 10.3 G 0.15	Opp. 20	n 0.18096858	Peri. 159.73781
rms res. 1".57 (M-P) 1906-1987		e 0.0706096	Node 42.64795
			Incl. 9.78080
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1436) Salonta	Obs. 57	M 33.58684	Sumzina
H 10.3 G 0.15	Opp. 18	n 0.17682313	Peri. 32.13106
rms res. 1".15 (M-P) 1933-1983		e 0.0745067	Node 260.29628
			Incl. 13.86605
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1446) Sillanpaa	Obs. 48	M 166.78455	Sumzina
H 12.7 G 0.15	Opp. 12	n 0.29294802	Peri. 195.98894
rms res. 1".81 (M-P) 1938-1983		e 0.1016677	Node 17.11451
			Incl. 5.25562
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1456) Saldanha	Obs. 67	M 85.95786	Filenko
H 10.93 G 0.15	Opp. 15	n 0.17131711	Peri. 55.53181
rms res. 1".76 (M-P) 1926-1986		e 0.2088689	Node 284.25676
			Incl. 10.67374
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1470) Carla	Obs. 68	M 127.43713	Filenko
H 11.0 G 0.15	Opp. 14	n 0.17491755	Peri. 332.76128
rms res. 2".78 (M-P) 1938-1989		e 0.0518030	Node 358.87697
			Incl. 3.20778
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1476) Cox	Obs. 33	M 277.05860	Filenko
H 12.9 G 0.15	Opp. 9	n 0.28619619	Peri. 349.53093
rms res. 1".75 (M-P) 1936-1986		e 0.1905396	Node 330.10678
			Incl. 6.32671
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1490) Limpopo	Obs. 74	M 322.81283	Filenko
H 12.0 G 0.15	Opp. 18	n 0.27313946	Peri. 89.78940
rms res. 1".49 (M-P) 1931-1989		e 0.1550170	Node 253.96590
			Incl. 10.02754
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1491) Balduinus	Obs. 84	M 118.63839	Filenko
H 11.3 G 0.15	Opp. 15	n 0.17128601	Peri. 151.21056
rms res. 1".37 (M-P) 1938-1989		e 0.1613440	Node 313.90600
			Incl. 3.74698
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1527) Malmquista	Obs. 35	M 178.71811	Bowell
H 12.2 G 0.15	Opp. 17	n 0.29629892	Peri. 304.07595
rms res. 0".97 (M-P) 1932-1989		e 0.1977209	Node 15.73030
			Incl. 5.18950
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1528) Conrada	Obs. 55	M 137.35567	Sumzina
H 12.4 G 0.15	Opp. 12	n 0.26247028	Peri. 59.17856
rms res. 1".72 (M-P) 1940-1987		e 0.1408309	Node 138.86591
			Incl. 8.52153
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1531) Hartmut	Obs. 56	M 38.46033	Sumzina
H 12.2 G 0.15	Opp. 12	n 0.23140200	Peri. 143.24106
rms res. 1".68 (M-P) 1938-1982		e 0.1535695	Node 278.69399
			Incl. 12.42326

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1537) Transylvania	Obs. 43	M 125.39562	Bowell
H 11.9 G 0.15	Opp. 7	n 0.18539969	Peri. 148.87117
rms res. 0".95 (M-P) 1903-1988		e 0.3027192	Node 229.59824
			Incl. 3.85993
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1539) Borrelly	Obs. 106	M 349.97486	Sumzina
H 10.6 G 0.15	Opp. 23	n 0.17561629	Peri. 245.77607
rms res. 1".89 (M-P) 1923-1989		e 0.1743775	Node 142.56308
			Incl. 1.72280
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1551) Argelander	Obs. 43	M 261.52436	Bowell
H 12.2 G 0.15	Opp. 16	n 0.26603658	Peri. 233.13298
rms res. 0".90 (M-P) 1930-1990		e 0.0672004	Node 106.89926
			Incl. 3.76515
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1553) Bauersfelda	Obs. 73	M 88.62460	Sumzina
H 11.7 G 0.15	Opp. 16	n 0.19879493	Peri. 19.55403
rms res. 1".49 (M-P) 1940-1987		e 0.0969526	Node 110.56811
			Incl. 3.23527
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1598) Paloque	Obs. 40	M 54.23578	Sumzina
H 12.2 G 0.15	Opp. 13	n 0.27672283	Peri. 301.32993
rms res. 1".47 (M-P) 1950-1987		e 0.0811702	Node 297.58391
			Incl. 7.53935
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1599) Giomus	Obs. 48	M 61.15217	Sumzina
H 11.0 G 0.15	Opp. 11	n 0.17733603	Peri. 0.68285
rms res. 1".38 (M-P) 1950-1987		e 0.1375226	Node 43.16902
			Incl. 6.08724
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1608) Munoz	Obs. 57	M 341.25267	Sumzina
H 12.9 G 0.15	Opp. 12	n 0.29921784	Peri. 315.85696
rms res. 1".56 (M-P) 1951-1986		e 0.1703980	Node 356.52002
			Incl. 3.94190
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1611) Beyer	Obs. 36	M 241.33218	Sumzina
H 11.3 G 0.15	Opp. 11	n 0.17380385	Peri. 79.09726
rms res. 1".41 (M-P) 1950-1987		e 0.1542205	Node 237.23685
			Incl. 4.26673
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1616) Filipoff	Obs. 73	M 199.12320	Sumzina
H 11.5 G 0.15	Opp. 15	n 0.19849062	Peri. 9.99219
rms res. 1".52 (M-P) 1950-1987		e 0.0173038	Node 47.99925
			Incl. 8.49883
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1623) Vivian	Obs. 81	M 134.47060	Sumzina
H 11.0 G 0.15	Opp. 16	n 0.17822661	Peri. 316.10763
rms res. 1".21 (M-P) 1948-1987		e 0.1726900	Node 115.30026
			Incl. 2.49400
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1633) Chimay	Obs. 64	M 346.05117	Bowell
H 10.5 G 0.15	Opp. 19	n 0.17433290	Peri. 57.04333
rms res. 1".05 (M-P) 1917-1989		e 0.1446192	Node 114.70085
			Incl. 2.67788
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (1690) Mayrhofer	Obs. 49	M 2.13524	Sumzina
H 10.9 G 0.15	Opp. 13	n 0.18583851	Peri. 155.97945
rms res. 1".50 (M-P) 1932-1988		e 0.0895619	Node 230.28411
			Incl. 13.01259

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (2636) Lassell Obs. 15 M 165.66903 Bowell
 H 11.0 G 0.15 Opp. 8 n 0.18944026 Peri. 147.50888
 rms res. 1".16 (M-P) 1956-1990 e 0.0775596 Node 98.51453
 Incl. 10.47554

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (2689) Bruxelles Obs. 30 M 207.17474 Williams
 H 13.9 G 0.15 Opp. 7 n 0.29560254 Peri. 10.75289
 rms res. 1".00 (M-P) 1952-1990 e 0.1184268 Node 190.17592
 Incl. 5.50667

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (2909) Hoshi-no-ie Obs. 17 M 33.44564 Bowell
 H 10.9 G 0.15 Opp. 6 n 0.18766144 Peri. 284.46073
 rms res. 0".90 (M-P) 1948-1990 e 0.1108084 Node 85.33328
 Incl. 11.44894

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (3383) Koyama Obs. 61 M 105.18499 Williams
 H 12.6 G 0.15 Opp. 6 n 0.23994515 Peri. 139.15457
 rms res. 0".93 (M-P) 1951-1990 e 0.0450720 Node 138.78954
 Incl. 14.63567

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (3460) Ashkova Obs. 15 M 355.49658 Bowell
 H 12.1 G 0.15 Opp. 6 n 0.17342410 Peri. 289.65539
 rms res. 1".01 (M-P) 1973-1990 e 0.2178045 Node 83.29010
 Incl. 2.36642

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (3870) Mayre Obs. 24 M 132.26522 Bowell
 H 12.3 G 0.15 Opp. 7 n 0.23196652 Peri. 65.55623
 rms res. 0".85 (M-P) 1968-1990 e 0.1626353 Node 201.60543
 Incl. 12.34788

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 (4132) Bartok Obs. 24 M 327.96870 Bowell
 H 11.8 G 0.15 Opp. 5 n 0.26395869 Peri. 254.46902
 rms res. 0".84 (M-P) 1975-1990 e 0.2887362 Node 172.61653
 Incl. 23.29963

(4647)* 1931 TU1 = 1970 PD = 1979 FN3 = 1979 GA = 1980 RF4

Discovered 1931 Oct. 9 by K. Reinmuth at Heidelberg.

Id. T. Kobayashi (MPC 11742), F. N. Bowman (ibid.), S. Nakano (d, MPC 11613)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
 M 40.45247 (1950.0) P Q
 n 0.20025186 Peri. 126.38383 +0.60562255 +0.79574983
 a 2.8934657 Node 180.89639 -0.76311018 +0.58010896
 e 0.2584799 Incl. 6.89703 -0.22557523 +0.17394194
 P 4.92 H 12.8 G 0.15

Residuals in seconds of arc

311009	024	(8.4- 6.9-)	790331	095	0.5-	0.2-	900916	400	1.5+	1.8+
311017	024	1.6- 0.6+	790401	809	0.1+	1.2+	900916	400	2.6+	1.0+
311020	024	(3.8- 5.4-)	790402	809	0.4+	0.1+	900916	400	1.9+	1.5+
311102	024	1.4+ 0.2+	800907	095	1.1-	1.0+	901017	400	2.7-	2.4-
700801	095	0.4- 1.3-	800909	095	1.6-	0.6-	901017	400	1.8-	3.7-
700807	095	2.2+ 0.8-	800911	095	0.7-	2.7+				

(4648)* 1931 UE = 1977 CA1

Discovered 1931 Oct. 18 by K. Reinmuth at Heidelberg.

Id. E. Bowell (MPC 10829)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Marsden

M 299.45441		(1950.0)			P		Q
n 0.26604866	Peri.	122.46160	+0.13661300				-0.98439257
a 2.3942086	Node	319.22304	+0.84224696				+0.17437620
e 0.1871068	Incl.	9.78002	+0.52149491				-0.02375288
P 3.70	H 13.1		G 0.15				

Residuals in seconds of arc

311018 024	1.1-	0.9-	770214 675	0.1+	0.1+	900919 801	0.2-	0.1+
311020 024	(4.2-	5.0-)	880217 801	0.2+	0.3-	900919 801	0.2-	0.1+
311022 024	0.3+	0.2+	880222 801	0.7-	0.8+	901016 801	0.2+	0.1+
311108 024	(4.3+	2.7-)	880318 801	0.8+	0.0	901016 801	0.2+	0.1+
311113 024	1.1+	0.3+	900918 801	0.1-	0.0	901017 801	0.1-	0.2+
770213 675	0.2+	0.1+	900918 801	0.1-	0.2+	901017 801	0.2-	0.3+

(4649)* 1936 YD = 1931 VD1 = 1981 YA = 1983 CD3 = 1986 YW

Discovered 1936 Dec. 20 by M. Laugier at Nice.

Id. S. Nakano (MPC 13155)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nakano

M 356.04475		(1950.0)			P		Q
n 0.21686178	Peri.	312.74946	+0.80972065				-0.52499289
a 2.7437679	Node	80.55412	+0.58537185				+0.69131239
e 0.1194674	Incl.	15.41313	+0.04113703				+0.49645709
P 4.54	H 11.6		G 0.15				

Residuals in seconds of arc

311104 690	0.2-	2.9+	830211 675	0.1+	2.4+	901021 801	0.2-	1.4+
311106 690	0.6+	0.7+	830211 675	1.4+	1.2+	901021 801	0.4-	1.3+
361220 020	2.4-	0.5+	861230 675	3.5+	0.2+	901022 399	1.0-	0.4-
361220 020	0.8-	1.1-	861230 675	3.2+	0.0	901022 399	0.0	0.4+
361221 020	(5.2-	0.2-)	870101 675	1.1-	0.4+	901112 413	0.9+	1.1+
361221 020	1.6+	0.3-	870101 675	3.1-	0.1+	901113 413	0.6+	1.0-
370103 020	(10.5+	15.2-)	901016 399	1.2-	0.3+	901117 399	1.4-	0.2+
370105 020	1.1-	1.1-	901016 399	2.2-	0.6+	901117 399	0.8-	0.1-
811218 688	2.5+	2.0-	901019 399	1.3-	1.4-			
811218 688	3.1+	1.9-	901019 399	1.5+	0.7-			

(4650)* 1950 TF = 1950 TU2 = 1930 UE1 = 1975 BR = 1984 YR5 = 1987 WJ

Discovered 1950 Oct. 5 by K. Reinmuth at Heidelberg.

Id. O. Kippes (d, MPC 650), H. Oishi (MPC 14942)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Oishi

M 332.08606		(1950.0)			P		Q
n 0.29457935	Peri.	91.48397	+0.78671536				-0.61371324
a 2.2370096	Node	306.37969	+0.52834410				+0.72519274
e 0.1473448	Incl.	4.74475	+0.31926705				+0.31217229
P 3.35	H 13.7		G 0.15				

Residuals in seconds of arc

301017 690	0.3+	1.5-	841228 095	1.5-	1.7+	900916 801	0.3+	0.1-
301019 690	1.0-	1.2-	871028 095	1.6-	0.9+	900916 801	0.2+	1.2+
501005 024	2.0+	1.0+	871119 688	0.5+	1.0+	900919 801	0.2+	0.1-
501006 024	(1.7-	4.9-)	871119 688	0.8+	0.5+	900919 801	0.3+	0.9-
501013 760	0.1-	0.6+	900819 801	0.6-	0.8-			
750117 095	0.5+	3.6-	900819 801	0.7-	1.1-			

(4651)* 1957 UK1 = 1957 XF = 1974 HP1 = 1981 UY14 = 1986 XG5

Discovered 1957 Oct. 31 at the Purple Mountain Observatory.

Id. C. M. Bardwell (d, MPC 6099), L. D. Schmadel (MPC 7239), S. Nakano (MPC 13050)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nakano

M 298.77039	(1950.0)		P	Q
n 0.20509639	Peri. 237.49517	+0.51792105		-0.85542814
a 2.8477206	Node 181.31251	+0.79455850		+0.48136573
e 0.0581869	Incl. 1.72530	+0.31691415		+0.19112750
P 4.81	H 12.7	G 0.15		

Residuals in seconds of arc

571031 330	(0.2+ 3.7+)	811023 095	1.7+ 0.7-	900822 675	2.0- 2.1-
571111 330	(3.7- 4.7+)	861204 046	0.7+ 2.2-	900829 675	0.1- 1.5-
571112 330	0.5+ 1.9+	861204 046	1.6+ 1.9-	900829 675	0.4+ 0.6-
571114 330	2.3- 1.6+	861205 046	(3.6+ 1.8-)	900913 675	0.1+ 0.8+
571118 330	0.9- 1.8+	861205 046	0.4+ 1.7-	900913 675	0.7+ 0.3-
571215 330	0.5+ 1.6+	861207 046	2.2- 1.9-	900918 675	0.8+ 1.2+
740424 805	2.3- 1.8-	861207 046	(3.0- 2.9-)	900918 675	1.5+ 0.5+
740425 805	1.5+ 0.8-	900822 675	0.4- 1.3-		

(4652)* 1975 QO = 1984 UM2

Discovered 1975 Aug. 30 at the Felix Aguilar Observatory, El Leoncito.

Id. C. M. Bardwell (MPC 9291)

Bardwell

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 156.91638	(1950.0)		P	Q
n 0.22935619	Peri. 50.27592	+0.94444142		-0.31203699
a 2.6431942	Node 327.52027	+0.21044164		+0.81540875
e 0.3110695	Incl. 11.08683	+0.25247718		+0.48758742
P 4.30	H 13.4	G 0.15		

Residuals in seconds of arc

750830 808	1.0- 2.4+	841026 675	0.4- 0.6+	900301 809	0.2+ 0.8+
750831 808	0.5+ 0.2+	841027 675	1.2- 0.0	900301 809	0.1- 0.7+
750902 808	0.6- 0.9+	841121 675	0.1+ 0.5-	900301 809	0.3+ 0.6+
750902 808	1.4+ 0.7-	841124 675	0.0 0.9+	900302 809	0.5+ 0.9-
750909 808	0.8- 0.5+	850122 801	0.4- 0.3+	900302 809	0.8+ 1.0-
750909 808	0.6- 1.3+	880808 095	0.4+ 1.4-	900302 809	1.1+ 1.0-
770212 675	0.6- 1.5+	880808 095	0.7+ 2.0-	900304 809	0.7- 0.1-
770214 675	0.2+ 0.6+	900228 809	0.4- 0.1-	900304 809	0.5- 0.1-
841023 675	1.5+ 0.2-	900228 809	0.1+ 0.1-	900304 809	0.7- 0.0
841025 675	0.0 0.3+	900228 809	0.4+ 0.3-		

(4653)* 1976 GJ2 = 1985 HD

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

Id. C. M. Bardwell (MPC 9765)

Bardwell

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 69.72099	(1950.0)		P	Q
n 0.22418313	Peri. 53.25411	-0.21657158		+0.97285599
a 2.6837008	Node 204.61680	-0.94643458		-0.22970851
e 0.1752775	Incl. 11.28797	-0.23949602		+0.02802180
P 4.40	H 13.0	G 0.15		

Residuals in seconds of arc

760401 095	(5.3- 6.3-)	850425 675	(1.5- 6.3+)	850521 688	0.2- 0.7+
760404 095	(2.1- 8.5-)	850425 675	(1.1+ 6.3+)	850719 801	0.4+ 0.4+
760425 808	0.2- 1.4+	850513 675	0.5- 0.3-	860909 095	0.7+ 2.6-
760429 808	0.2- 0.3-	850515 675	0.7- 0.7-	900722 675	0.4+ 0.2-
760429 808	1.2- 0.2+	850515 688	0.6+ 0.0	900722 675	0.5+ 1.2+
760503 808	1.6+ 0.9-	850515 688	0.5- 0.5-	900723 675	0.7+ 0.4+
760503 808	(0.5- 26.0-)	850518 688	0.5+ 0.5+	900723 675	0.7- 1.1+
850423 675	(3.1+ 5.4+)	850518 688	0.3- 0.7+	901021 675	1.3- 0.5-
850424 675	(0.7+ 6.1+)	850521 688	0.4+ 2.7-	901021 675	0.2- 0.3-

(4654)* 1977 RJ6 = 1984 WK4 = 1986 HM

Discovered 1977 Sept. 11 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. C. M. Bardwell (MPC 12567), S. J. Bus (ibid.), B. G. Marsden (ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

				Bardwell	
M		(1950.0)	P	Q	
n	0.30115944	Peri.	245.03290	-0.02710144	+0.99889318
a	2.2043052	Node	23.51059	-0.87883020	-0.00548198
e	0.1652821	Incl.	5.53018	-0.47636434	-0.04671574
P	3.27	H	13.5	G	0.15

Residuals in seconds of arc

770911	095	0.5-	0.2+	841119	675	0.9-	0.8+	900921	801	0.3+	0.1+
771007	675	0.5-	0.7-	841121	675	1.7-	0.6+	900921	801	0.2+	0.2+
771011	675	0.8-	1.3+	860408	071	0.7+	0.3-	900922	809	1.1-	1.5+
771011	675	0.6-	0.9+	860408	071	0.6+	1.1-	900922	809	1.0-	2.0+
771012	675	1.4+	1.1-	860409	071	0.9-	0.4-	900922	809	0.4-	1.3+
771012	675	1.1+	0.6-	860409	071	0.2+	0.8-	900925	809	0.4-	0.4+
771016	675	0.1+	1.0-	860409	071	2.6+	0.6-	900925	809	0.5-	0.4+
771016	675	0.9+	1.4-	860409	071	1.2-	2.7-	900925	809	0.3-	0.6+
771017	675	0.6+	0.3-	860430	675	2.1-	0.3+	901015	801	0.2+	0.4-
771017	675	0.7-	1.0+	860430	675	0.4-	1.6+	901015	801	0.0	0.4-
771021	675	1.1-	0.9-	860503	675	2.3-	2.3+	901020	801	0.3+	0.6-
771021	675	0.1-	0.4-	890311	801	2.9+	0.6+	901020	801	0.1+	0.5-
771022	675	2.2+	1.0-	900918	801	0.3-	0.5+	901021	801	0.7+	0.7-
771022	675	2.5+	2.0-	900918	801	0.2-	0.0	901021	801	0.4+	0.7-

(4655)* 1978 RS = 1985 WC

Discovered 1978 Sept. 1 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Id. C. M. Bardwell (MPC 10390)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

				Bardwell	
M		(1950.0)	P	Q	
n	0.29134028	Peri.	46.52174	+0.99970457	-0.00180432
a	2.2535595	Node	313.56565	-0.00851548	+0.90803421
e	0.1912050	Incl.	1.91700	+0.02276514	+0.41889214
P	3.38	H	13.6	G	0.15

Residuals in seconds of arc

780901	095	1.1+	0.9-	851120	095	0.0	1.3+	900228	809	0.6-	1.2-
780905	095	0.8+	0.1-	851216	801	0.1-	0.2+	900228	809	0.2-	1.1-
780907	095	1.2-	1.7-	880808	095	0.2+	0.9-	900301	809	0.5-	1.3+
780912	095	0.5-	0.6-	880808	095	0.0	1.4-	900301	809	0.2-	1.1+
780928	095	2.4+	0.2+	880809	688	(2.5-	3.7+)	900301	809	0.2-	0.7+
781004	095	0.1-	0.4-	880809	688	0.5+	1.8+	900302	809	0.7+	1.2-
781008	095	0.4-	0.8-	880809	095	1.5+	0.1-	900302	809	0.6+	1.1-
781009	095	0.7-	0.2-	880809	095	1.1-	0.2+	900302	809	0.9+	1.2-
781024	095	1.0+	0.7-	880810	801	0.6+	0.3+	900304	809	0.7-	1.3-
851110	095	0.2+	2.5+	880916	801	1.5-	1.4-	900304	809	0.9-	1.3-
851117	054	0.3-	0.9-	900228	809	1.1-	0.9-	900304	809	0.9-	1.2-

(4656)* 1978 VZ3 = 1977 QE5 = 1987 RN5

Discovered 1978 Nov. 7 by E. F. Helin and S. J. Bus at Palomar.

Id. S. Nakano (MPC 15551)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

				Nakano	
M		(1950.0)	P	Q	
n	0.20466737	Peri.	46.63315	+0.60314252	-0.79762667
a	2.8516987	Node	6.27413	+0.72280648	+0.54481425
e	0.0744524	Incl.	1.72302	+0.33729793	+0.25878393
P	4.82	H	12.6	G	0.15

Residuals in seconds of arc

770819	675	0.5-	2.1-	781129	675	0.9-	0.0	890113	399	1.5+	0.1+
770819	675	1.6+	0.8-	781130	675	0.8-	0.9-	890113	399	2.0-	1.8+
781105	675	0.1+	0.9+	870904	095	(0.2+	5.2+)	890129	399	0.5-	0.7-
781106	675	1.2+	0.3+	870924	095	0.3-	0.6+	890129	399	2.6-	1.7-
781107	675	0.7+	0.6+	890106	399	2.8+	1.4-	890129	399	2.6-	0.3+
781108	675	0.4-	0.3+	890106	399	2.7+	1.8-				

(4657)* 1979 SU9 = 1978 NU7 = 1987 GJ1

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

Id. S. J. Bus (k, MPC 10761), C. M. Bardwell (MPC 12010)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Marsden

M	353.01774		(1950.0)			P			Q		
n	0.17934116	Peri.	35.96438			+0.81641629			-0.57746380		
a	3.1142208	Node	359.30796			+0.52856196			+0.74732291		
e	0.1657979	Incl.	0.29847			+0.23256547			+0.32870051		
P	5.50	H	12.0			G	0.15				

Residuals in seconds of arc

780705	675	0.6-	0.3+	851113	095	0.8+	1.2+	900919	801	0.3+	0.1-
780706	675	0.9+	1.0+	870401	675	1.8-	1.0+	900919	801	0.3+	0.1-
790922	095	1.0+	1.8+	870401	675	1.0+	0.6-	901020	801	0.0	0.1-
790928	095	0.9-	0.2+	870403	675	1.2-	0.8+	901020	801	0.1-	0.2-
791016	095	2.1-	1.4+	870403	675	1.8+	0.3-	901021	801	0.0	0.3-
791111	095	0.9+	1.3-	900918	801	0.2+	0.8-	901021	801	0.1+	0.2-
791116	095	0.3-	0.0	900918	801	0.1+	0.6-				

(4658)* 1979 SO11 = 1968 UF = 1978 LX = 1985 YG2

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

Id. E. Bowell (k, MPC 10830), L. D. Schmadel (ibid.), B. G. Marsden

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Marsden

M	12.88869		(1950.0)			P			Q		
n	0.17634043	Peri.	203.79579			+0.99800343			+0.06250071		
a	3.1494505	Node	152.61612			-0.05430403			+0.92269584		
e	0.2015052	Incl.	1.13372			-0.03225260			+0.38042877		
P	5.59	H	12.6			G	0.15				

Residuals in seconds of arc

681022	095	0.1-	0.0	791116	095	0.7-	0.5+	901015	801	0.0	0.6+
780610	675	0.2+	0.6+	791122	095	1.4+	0.1+	901015	801	0.0	0.6+
780612	675	0.3-	0.3-	851217	010	(21.8+	7.5-)	901020	801	0.5-	0.3+
780613	675	0.4+	0.2-	851217	010	(25.4+	5.5-)	901020	801	0.5-	0.3+
790924	095	1.2-	0.8-	900824	675	1.0+	0.9-	901021	801	0.2-	0.8+
791014	095	0.3+	1.7-	900824	675	0.1+	0.8-	901021	801	0.2-	0.7+

(4659)* 1981 EP20 = 1979 SY7 = 1979 TO1

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

Id. K. Hurukawa (MPC 9751), N. S. Chernykh (d, ibid.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nakano

M	6.82998		(1950.0)			P			Q		
n	0.27014937	Peri.	4.83613			+0.91260491			-0.40859495		
a	2.3699185	Node	19.29964			+0.37362847			+0.81936602		
e	0.2237258	Incl.	2.46735			+0.16599411			+0.40210631		
P	3.65	H	14.5			G	0.15				

Residuals in seconds of arc

770212	675	1.3-	0.7-	780510	675	2.2-	0.2+	810202	413	1.6+	1.8-
770214	675	1.2-	0.0	790923	095	0.3-	0.3+	810213	413	0.4+	0.9-
780509	675	(3.5-	0.9+)	791014	095	1.1+	0.2-	810302	413	0.9-	0.8+

810303	413	0.7+	0.1+	810411	413	0.8-	0.9+	901013	033	2.3+	0.8+
810307	413	0.7+	0.3+	810411	413	0.6+	0.8-	901014	033	0.3-	0.2+
810307	413	1.1+	1.0-	810502	413	1.0+	0.3-	901015	801	0.6-	0.3-
810311	413	1.4-	1.4+	810503	413	0.3-	0.5-	901015	801	0.7-	0.3-
810316	413	0.9-	0.5+	840124	381	(1.3-	3.7+)	901018	033	1.6+	0.2-
810316	413	2.3+	1.3-	840124	381	0.4-	1.1+	901018	886	2.4-	0.1+ Y
810329	413	0.2+	0.5+	901011	033	0.2-	0.1+	901018	886	1.3+	0.2- Y
810408	413	1.3-	1.1+	901012	033	0.9+	0.6+	901020	886	0.3-	1.4- Y
810408	413	1.4+	0.8-	901012	033	0.2+	0.4+	901020	886	2.0-	0.2- Y

(4660)* 1982 DB

Discovered 1982 Feb. 28 by E. F. Helin at Palomar.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Bowell

M	303.62983		(1950.0)		P		Q
n	0.54215844	Peri.	157.94785		-0.37395897		-0.92727381
a	1.4895391	Node	314.00701		+0.84712613		-0.33368340
e	0.3604285	Incl.	1.42063		+0.37753410		-0.16976063
P	1.82	H	18.3	G	0.15		

Residuals in seconds of arc

810930	413	0.6+	1.7-	820327	474	(2.5-	1.2+)	900916	413	1.4-	0.1+
810930	413	(7.4+	0.9-)	820327	474	0.9-	0.5+	900917	413	0.2+	0.6+
820228	675	0.0	1.4+	820331	675	0.5+	0.4-	900922	688	0.0	0.5+
820228	675	0.1-	0.9+	820331	675	0.3+	0.6-	900922	688	0.2-	0.6+
820303	675	1.9+	0.1-	820413	801	0.9-	0.4+	900925	688	0.2+	0.1+
820304	675	2.0-	0.2-	820423	474	(4.3-	1.3-)	900925	688	0.3+	0.2+
820304	688	0.2+	2.0-	820423	474	(3.2-	2.1-)	901116	688	0.0	0.3+
820304	688	(0.5-	3.9-)	820425	474	(3.6-	0.1+)	901116	688	0.2-	0.0
820323	801	1.9+	1.3+	820425	474	(3.5-	0.5-)	901116	688	0.3+	0.1-
820324	675	1.2-	1.3-	820514	675	(3.2+	0.4+)				
820324	675	0.5-	0.0	820516	675	0.7+	0.2-				

(4661)* 1982 WM = 1963 SB1 = 1986 VE6 = 1988 EP1

Discovered 1982 Nov. 17 at the Centro Astronomico de Yebes.

Id. S. Nakano (MPC 13606)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nakano

M	26.98982		(1950.0)		P		Q
n	0.25944289	Peri.	286.30497		+0.87675254		-0.47418535
a	2.4346780	Node	102.06176		+0.46663424		+0.79828122
e	0.1597004	Incl.	4.71190		+0.11643657		+0.37134263
P	3.80	H	12.9	G	0.15		

Residuals in seconds of arc

630927	760	0.4+	0.7-	861106	688	1.1+	0.5+	900918	801	0.7-	0.1-
630927	760	0.3-	0.1-	861106	688	1.6+	0.6+	900918	801	0.2+	0.7+
821014	095	2.6-	2.5+	861204	688	2.4+	1.8+	901015	801	0.9-	0.1+
821015	095	1.7-	0.7+	861204	688	0.1+	0.3-	901015	801	1.1-	0.8-
821021	095	1.3+	2.2-	880313	054	2.2+	0.6+	901017	801	1.4-	0.0
821117	491	0.2+	2.2-	880313	054	1.0-	0.0	901017	801	1.5-	0.9-
821118	491	0.4+	1.2+	880314	054	0.0	0.2-				

(4662)* 1984 HL = 1970 JD = 1988 AW4

Discovered 1984 Apr. 19 by A. Mrkos at Klet.

Id. B. G. Marsden (MPC 13455)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Marsden

M	187.70828		(1950.0)		P		Q
n	0.21097162	Peri.	356.49265		-0.90106684		-0.43183726
a	2.7946024	Node	157.78891		+0.40040178		-0.86376699
e	0.1074217	Incl.	6.06479		+0.16660419		-0.25965973
P	4.67	H	12.0	G	0.15		

Residuals in seconds of arc

700508	095	0.6+	2.2+	880114	809	0.2-	0.3-	880123	809	0.1+	0.1-
840419	046	2.5+	0.5-	880115	809	0.1-	0.5-	880123	809	0.1+	0.6-
840419	046	0.0	1.0-	880115	809	0.1-	0.5-	880125	809	0.2-	0.1-
840425	046	1.8+	1.0-	880115	809	0.0	0.8-	880125	809	0.3+	0.4-
840425	046	0.4+	3.1-	880115	809	0.1-	0.4-	880126	809	0.3+	0.3-
840428	046	2.4-	0.4+	880115	809	0.0	0.3-	880126	809	0.4+	0.3-
840428	046	3.6-	0.7-	880115	809	0.0	0.2-	880127	809	0.1+	0.9-
880111	809	0.1+	0.4-	880117	809	0.1-	0.5+	880128	809	0.0	0.9-
880111	809	0.2+	0.7-	880117	809	0.1-	0.3+	880128	809	0.0	0.7-
880111	809	0.1+	1.0-	880117	809	0.5-	0.3+	880129	809	0.2-	0.9-
880113	809	0.0	0.6+	880117	809	0.2+	0.4+	880130	809	0.4-	0.6-
880113	809	0.0	0.5+	880117	809	0.1-	0.5+	890630	801	0.6-	0.1-
880113	809	0.1-	0.5+	880117	809	0.0	0.7+	900820	801	2.3+	1.0-
880114	809	0.0	0.0	880119	809	0.0	0.3+	900820	801	0.8+	1.1-
880114	809	0.0	0.2+	880119	809	0.0	0.2+	900916	801	1.2-	2.0-
880114	809	0.0	0.2+	880119	809	0.0	0.2+	900916	801	0.2-	1.9-
880114	809	0.6-	0.5-	880121	809	0.2-	0.2-	900919	801	0.1+	1.6-
880114	809	0.1-	0.6-	880121	809	0.2+	0.0	900919	801	0.5+	0.9-

(4663)* 1984 SM1 = 1955 QF1 = 1978 RX3 = 1978 SK4 = 1987 DK5

Discovered 1984 Sept. 27 by A. Mrkos at Klet.

Id. S. Nakano (MPC 11854, MPC 13158)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

				Nakano	
M		(1950.0)	P	Q	
n	0.17162427	Peri.	353.40227	+0.97186292	+0.23334935
a	3.2068864	Node	352.85655	-0.20257790	+0.75849364
e	0.0638890	Incl.	14.96043	-0.12018597	+0.60846978
P	5.74	H	11.9	G	0.15

Residuals in seconds of arc

550825	760	1.4+	0.5+	840929	046	0.4-	0.8-	901012	046	1.4+	0.0
550825	760	0.1+	0.2-	840929	046	1.9-	1.4-	901012	046	1.9+	0.9-
550825	760	1.3-	0.3-	840930	046	0.1+	1.4-	901013	046	0.2+	0.9+
780903	095	1.3-	3.3+	840930	046	0.9-	1.6-	901013	046	0.7-	1.0+
780928	095	0.5+	3.7+	870223	010	0.2+	0.3-	901020	801	0.2+	0.8+
840920	046	1.4-	1.0-	870223	010	0.9+	0.3+	901020	801	0.3+	0.8+
840920	046	0.9+	0.4-	870223	010	0.5-	1.0+	901022	801	0.2-	0.6+
840927	046	1.5+	3.0-	900916	046	0.6-	1.4+	901022	801	0.3-	0.5+
840927	046	1.5+	2.7-	900916	046	1.5-	2.0+				

(4664)* 1985 PJ = 1978 FA = 1981 XR = 1986 XD4 = 1988 DT = 1990 QC4

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

Id. S. Nakano (MPC 17015)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

				Nakano	
M		(1950.0)	P	Q	
n	0.20127454	Peri.	0.70672	+0.91279418	+0.40827203
a	2.8836563	Node	335.18791	-0.37482785	+0.82673018
e	0.0686119	Incl.	1.50037	-0.16220624	+0.38708030
P	4.90	H	12.6	G	0.15

Residuals in seconds of arc

780316	801	0.9+	0.8+	850820	688	1.8-	1.4+	880216	809	0.2-	0.1-
811204	511	1.2+	2.0+	850820	688	0.2-	1.3+	900816	809	0.7+	1.1+
811204	511	1.5+	2.2+	850820	071	0.1+	1.0+	900816	809	0.4+	1.1+
850814	688	1.4-	0.4-	850822	688	0.4-	0.1+	900816	809	0.5+	0.5+
850814	688	0.5-	0.8-	850822	688	1.6-	0.4+	900818	809	0.4+	1.1+
850819	071	0.7-	0.1-	861204	010	(7.4-	1.5-)	900818	809	0.1-	1.1+
850819	071	0.2+	0.2+	861205	010	4.2-	2.9-	900818	809	0.3-	1.8+
850819	071	1.0+	0.9+	880216	809	0.4+	0.5-	900822	675	0.2+	1.4-

900822	675	0.2+	1.3-	900829	675	0.2+	1.1-	900913	675	0.4+	1.0-
900823	675	0.2+	1.2-	900829	675	0.5+	1.7-	900918	675	0.9+	0.2-
900823	675	0.5+	1.0-	900913	675	0.1+	0.3-	900918	675	0.7+	0.8-

(4665)* 1985 TZ1 = 1975 VN3 = 1980 TD7 = 1988 CU4

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

Id. T. A. Vinogradova (MPC 14195)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	41.64246		(1950.0)			P		Nakano		Q	
n	0.19296088	Peri.	74.17602			+0.65360271		+0.74914908			
a	2.9659002	Node	237.14376			-0.73411936		+0.59296801			
e	0.2032914	Incl.	7.35968			-0.18404421		+0.29523650			
P	5.11	H	12.1			G	0.15				

Residuals in seconds of arc

751102	095	0.6-	4.2+	880216	809	1.0-	0.2+	900816	801	0.4-	0.6+
801014	330	0.1+	4.4-	880216	809	0.1+	0.4+	900816	801	0.2+	1.1+
850919	095	0.0	0.2+	880216	809	1.3-	0.1-	900922	657	1.5-	0.0
850921	095	0.7+	1.1+	880221	809	0.6+	0.1-	901012	413	0.3-	1.4-
851015	688	0.3-	0.1+	880221	809	0.5+	0.0	901012	413	1.3+	0.9+
851015	688	0.8-	1.3+	880221	809	0.2+	0.0	901016	801	0.3+	0.5-
851018	095	1.2+	1.3-	880223	809	0.2-	0.4-	901016	801	0.3+	0.5-
880213	809	0.4+	0.0	880223	809	0.3-	0.0	901017	801	0.1+	0.5-
880215	809	1.0+	0.8-	880223	809	0.3-	0.1+	901017	801	0.2+	0.6-

(4666)* 1986 JA1

Discovered 1986 May 4 by C. S. Shoemaker at Palomar.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	78.61938		(1950.0)			P		Bardwell		Q	
n	0.27556161	Peri.	41.39925			-0.02451240		+0.94799683			
a	2.3387847	Node	229.81186			-0.99115484		-0.06445987			
e	0.2341683	Incl.	24.54435			-0.13042707		+0.31168405			
P	3.58	H	13.5			G	0.15				

Residuals in seconds of arc

860504	675	(7.1-	84.6+)	860615	883	1.2-	1.0-	890214	474	0.7+	0.3-
860508	675	0.0	0.8+	860902	691	0.7+	0.4+	900921	801	0.6-	0.6+
860509	675	0.2+	1.4+	860902	691	0.8+	0.2+	900921	801	0.6-	0.7+
860510	675	1.8-	2.8+	860902	691	0.6+	0.3+	901015	801	0.1+	0.5+
860611	883	0.8+	0.2-	861007	801	2.4+	0.2-	901015	801	0.3+	0.5+
860612	883	0.9+	0.8-	871022	801	1.3-	0.7+	901016	801	0.3+	0.1+
860612	883	0.3+	1.4-	880116	801	1.1+	1.3+	901016	801	0.2+	0.1+
860615	883	1.6-	0.1-	890214	474	0.2-	0.2+				

(4667)* 1986 VC

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

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	336.93728		(1950.0)			P		Marsden		Q	
n	0.22640080	Peri.	23.71538			+0.87222948		-0.48871938			
a	2.6661469	Node	5.65484			+0.41170907		+0.71244846			
e	0.0885646	Incl.	11.24342			+0.26402912		+0.50355791			
P	4.35	H	12.6			G	0.15				

Residuals in seconds of arc

840329	413	1.8-	0.7-	861104	413	0.6+	1.1-	861109	413	1.5-	0.3-
840329	413	1.6+	1.6-	861105	413	0.5-	0.1-	861202	413	0.8-	0.2-
861104	010	0.1+	0.5-	861105	413	1.3+	2.5-	861203	413	0.2+	0.3+
861104	010	0.7+	0.0	861105	010	(5.2-	1.2-)	890415	413	0.4-	0.6-
861104	413	0.8+	0.8+	861105	010	(3.6+	0.7-)	890416	413	1.4-	2.1-

890721	413	0.3+	0.4+	900825	675	0.2-	0.2-	900922	801	0.4-	0.7+
890725	413	0.6-	0.4+	900828	413	0.8+	1.0-	900922	801	0.2-	0.6+
900825	675	0.3-	0.2+	900921	413	1.5+	0.1+				

(4668)* 1987 DX5 = 1954 YE = 1974 SN2 = 1979 QZ7 = 1979 SK1 = 1985 VP5
 Discovered 1987 Feb. 21 by H. Debehogne at the European Southern
 Observatory.

Id. S. Nakano (MPC 13302)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	11.51845		(1950.0)			P				Nakano	
n	0.18819928	Peri.	69.12986	+0.94175323						Q	
a	3.0157182	Node	308.84147	+0.21633907							
e	0.1142897	Incl.	9.24703	+0.25748450							
P	5.24	H	11.7	G	0.15						

Residuals in seconds of arc

541224	760	0.1+	0.5+	870223	809	0.5-	0.3+	870302	809	0.7-	0.7+
541224	760	(10.6+	0.6+)	870223	809	0.4-	0.2+	870305	809	0.1+	0.2-
740920	095	0.4+	0.7+	870223	809	0.4-	0.2+	870305	809	0.0	0.1-
740922	095	0.9-	0.4-	870225	809	0.0	0.5+	870305	809	0.1-	0.3-
790826	095	0.6-	2.6+	870225	809	0.3+	0.3+	870306	809	0.5+	0.3-
790921	808	0.2+	0.2-	870225	809	0.7+	0.1+	870306	809	0.6+	0.3-
790921	808	0.2-	0.7-	870227	809	0.8-	0.4-	870306	809	0.8+	0.3-
851111	095	0.7+	2.5-	870227	809	0.5-	0.3-	900919	801	0.6-	0.1+
870221	809	0.5+	0.4+	870227	809	0.5-	0.5-	900919	801	0.4-	0.7-
870221	809	0.7+	0.3+	870301	809	0.1+	0.0	901016	801	0.1-	0.7+
870221	809	1.0+	0.4+	870301	809	0.1+	0.3-	901016	801	0.1-	0.8+
870222	809	0.5+	0.4+	870301	809	0.1-	0.3-	901017	801	0.1+	0.9+
870222	809	0.4+	0.5+	870302	809	0.7-	0.7+				
870222	809	0.5+	0.5+	870302	809	0.6-	0.7+				

(4669)* 1987 UF1 = 1974 VR1 = 1982 BO2

Discovered 1987 Oct. 27 by P. Jensen at Brorfelde.

Id. S. Nakano (MPC 12944)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	352.33606		(1950.0)			P				Nakano	
n	0.30228251	Peri.	261.24726	+0.99288791						Q	
a	2.1988420	Node	103.98606	+0.11379531							
e	0.1887288	Incl.	4.49022	-0.03498890							
P	3.26	H	13.9	G	0.15						

Residuals in seconds of arc

741115	095	0.8+	2.5-	871027	054	0.4-	0.9+	900817	801	0.1+	0.2-
820119	046	0.1-	2.8+	871030	054	0.7+	1.6+	900817	801	0.3+	0.1-
820119	046	0.8+	0.9+	871114	054	0.3-	0.2-	901015	801	0.1-	0.6+
820120	046	0.4-	2.4-	871114	054	0.5-	2.0-	901016	801	0.0	0.3+
820120	046	(4.9-	1.7+)	900816	801	0.1-	0.3-	901016	801	0.0	0.5+
871027	054	0.2-	1.3+	900816	801	0.3-	0.4-	901017	801	0.0	0.6+

(4670)* 1987 YJ = 1980 XX1 = 1986 PF2

Discovered 1987 Dec. 19 by T. Seki at Geisei.

Id. T. Kobayashi (MPC 12951)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	280.88655		(1950.0)			P				Nakano	
n	0.29390331	Peri.	180.99642	-0.71208500						Q	
a	2.2404387	Node	314.41227	+0.64472965							
e	0.0924484	Incl.	5.01508	+0.27795437							
P	3.35	H	13.4	G	0.15						

Residuals in seconds of arc

801210	095	0.1+	0.5-	860801	675	1.6+	3.2-	860802	675	(37.9-	4.6-)
860801	675	(0.4-	4.9-)	860802	675	(41.3-	6.4-)	871219	372	1.8-	1.6-

871219	372	1.0+	0.8-	871227	372	2.6+	2.2-	901016	372	1.4-	1.0+
871221	372	0.4-	0.7-	871227	372	2.0+	2.3-	901017	372	0.5+	0.1+
871221	372	1.6+	0.2+	880110	372	1.8-	1.4+	901020	898	(0.5-	5.8+)
871223	372	2.1-	0.4-	880110	372	(3.8+	1.6+)	901020	898	(0.6-	5.0+)
871223	372	2.0-	1.7+	880116	372	0.3-	0.7-	901114	372	0.8-	1.7+
871225	372	0.8-	0.4+	880116	372	2.8+	1.2+				
871225	372	2.0-	0.1+	901015	372	0.9+	0.1-				

(4671)* 1988 AK1 = 1974 HM2 = 1986 RR7

Discovered 1988 Jan. 10 by A. Mrkos at Klet.

Id. S. Nakano (MPC 14791)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

				Nakano	
M		(1950.0)		P	Q
n	0.26758202	Peri.	330.91041	+0.76476648	+0.64410736
a	2.3850534	Node	348.94669	-0.57372492	+0.66943251
e	0.0625904	Incl.	4.80531	-0.29320974	+0.37011596
P	3.68	H	13.0	G	0.15

Residuals in seconds of arc

740424	805	0.0	0.1+	880110	046	0.2+	2.2-	901015	801	0.0	0.3+
860907	095	0.2-	0.4-	880112	046	0.9-	0.0	901015	801	0.0	0.4+
860912	095	0.7+	0.4-	880112	046	0.6-	0.9+	901024	046	0.5+	0.0
871224	010	(2.7-	1.4+)	880113	046	1.3+	1.7-	901024	046	1.5+	1.1-
871224	010	0.1-	0.9+	880113	046	(2.2+	2.9-)	901115	400	1.9-	0.7+
871224	010	0.2-	1.1+	880120	046	0.6+	0.4+	901115	400	0.7-	0.5+
880110	046	0.6-	0.1-	880120	046	(3.1+	0.8-)				

(4672)* 1988 HB = 1971 HT = 1979 WS7 = 1981 AN3

Discovered 1988 Apr. 17 by S. Ueda and H. Kaneda at Kushiro.

Id. S. Nakano (MPC 13162)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

				Nakano	
M		(1950.0)		P	Q
n	0.17363340	Peri.	176.42718	-0.03156731	+0.96288039
a	3.1821003	Node	91.63303	-0.92350113	+0.07448800
e	0.0624993	Incl.	15.55630	-0.38229461	-0.25944727
P	5.68	H	10.8	G	0.15

Residuals in seconds of arc

710427	095	0.8-	2.4-	880509	399	1.4+	0.7-	901022	399	1.7-	0.6-
791117	095	0.8-	0.2+	880514	399	1.0+	1.0-	901022	399	1.7+	0.5-
810108	381	0.1+	0.3-	880514	399	1.0+	1.2+	901022	399	2.6+	1.7-
810108	381	0.1-	0.2-	880514	399	1.3+	0.6-	901111	399	0.0	1.2-
880417	399	2.4-	0.6+	901016	399	0.3-	0.0	901111	399	0.7-	1.5-
880417	399	0.8-	0.9+	901016	399	0.4-	0.1-	901111	399	1.5+	0.6+
880417	399	1.8-	1.2+	901016	399	1.2+	0.2+	901112	413	0.7+	0.7+
880505	399	0.3+	0.7-	901019	399	0.6+	0.9+	901113	413	1.7-	0.6-
880505	399	0.4-	0.3-	901019	399	1.6+	1.9+	901113	413	0.7-	1.8-
880505	399	0.4-	0.7-	901021	801	0.6-	0.7+	901117	399	0.3-	2.3-
880509	399	0.4+	0.1-	901021	801	0.6-	0.8+	901117	399	1.1-	1.6+

(4673)* 1988 LF = 1959 CX = 1972 LF = 1981 PE

Discovered 1988 June 8 by C. S. Shoemaker at Palomar.

Id. C. M. Bardwell (MPC 13470)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

				Bardwell	
M		(1950.0)		P	Q
n	0.24216077	Peri.	344.22331	+0.01888046	-0.96227508
a	2.5491782	Node	104.09100	+0.94488678	-0.07157374
e	0.0579458	Incl.	16.25083	+0.32685242	+0.26249548
P	4.07	H	11.9	G	0.15

Residuals in seconds of arc

590212	760	1.7+	1.2-	810805	688	0.7+	1.0-	880718	675	1.3+	2.2-
590212	760	1.4-	0.3+	880512	675	0.1-	0.4-	900918	801	0.1-	2.3-
590308	760	(6.2-	0.3+)	880512	675	1.0-	2.4-	900918	801	0.1-	2.3-
590308	760	0.2-	0.8-	880608	675	0.1+	0.2-	900921	801	0.2-	1.7-
720606	095	(6.9+	9.7+)	880611	675	0.4+	0.1+	900921	801	1.7+	0.9-
720610	095	1.6-	0.8-	880613	675	1.8-	0.6+	901017	801	0.8+	0.7-
810805	688	0.7+	1.6-	880717	675	0.9-	3.0-	901017	801	0.6+	0.7-

(4674)* 1989 JC

Discovered 1989 May 2 by E. F. Helin at Palomar.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

				(1950.0)		P		Q	
M	305.16312								
n	0.38897733	Peri.	239.59253		-0.33545290				-0.90439154
a	1.8586025	Node	232.39588		+0.93739415				-0.29262879
e	0.0702488	Incl.	19.44333		+0.09361390				-0.31055490
P	2.53	H	13.4	G	0.15				

Nakano

Residuals in seconds of arc

851215	675	0.1-	3.0+	890603	675	0.7-	1.9-	901020	402	0.6+	1.2+
851215	675	1.2+	2.6+	890605	675	1.8-	0.7-	901021	402	0.6-	1.7-
870823	675	0.5+	2.5+	890605	675	(3.3-	1.9-)	901021	402	0.1+	2.6+
870823	675	1.2-	0.5+	900921	801	0.3+	1.0-	901031	898	0.8+	0.3-
870825	675	1.9-	0.0	900921	801	0.2+	1.1-	901031	898	0.2+	1.2-
870825	675	0.6+	0.6+	900923	675	1.1-	1.4-	901113	400	1.2-	1.2-
890502	675	2.2+	0.2+	900925	675	(1.8-	3.1-)	901113	400	2.0+	1.2-
890502	675	1.0+	0.8+	901015	801	0.2-	0.2-	901113	877	1.3-	0.9-
890504	675	0.5-	0.1-	901015	801	0.1-	0.3-	901113	877	0.9-	0.4-
890504	675	0.4+	0.2-	901016	801	0.1-	0.3-				
890603	675	0.8-	0.6-	901016	801	0.1-	0.3-				

(4675)* 1990 SD = 1970 CM = 1975 TX = 1981 DB4 = 1983 VK2 = 1986 RJ2
= 1986 RR6

Discovered 1990 Sept. 19 by T. Seki at Geisei.

Id. S. Nakano (MPC 17215)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

				(1950.0)		P		Q	
M	136.83845								
n	0.26325645	Peri.	294.93623		-0.65476174				+0.75246167
a	2.4111082	Node	293.97022		-0.66221779				-0.61659776
e	0.1753676	Incl.	4.47743		-0.36435515				-0.23153539
P	3.74	H	12.9	G	0.15				

Nakano

Residuals in seconds of arc

700211	805	0.3+	0.2+	900916	675	0.0	0.8-	900920	675	0.9+	0.7-
700211	805	0.4-	0.4+	900916	675	0.8+	1.0-	900920	675	0.1-	0.5+
700211	805	0.3+	0.0	900917	675	0.5+	1.0-	900920	372	(2.7+	0.6+)
751003	095	1.5-	1.9+	900917	675	0.2+	1.5-	900920	372	0.3-	1.9+
810223	095	0.4-	0.6-	900918	675	1.1-	2.3-	900921	372	1.5-	0.4+
831108	381	0.9+	0.2+	900918	675	0.3+	0.1-	900921	372	0.8-	0.6+
831108	381	0.3+	0.2+	900918	675	(0.9-	3.4-)	900926	372	2.2-	0.7-
860906	095	(4.1-	0.2-)	900918	675	1.1+	0.2-	901008	372	0.7+	0.8+
860912	054	1.0+	0.6+	900919	372	0.1-	1.4+	901008	372	1.0+	0.0

(4676)* 1990 SD4 = 1952 JD = 1978 JE = 1983 VF1 = 1987 WS4 = 1989 GQ7

Discovered 1990 Sept. 16 by T. Fujii and K. Watanabe at Kitami.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

				(1950.0)		P		Q	
M	138.20934								
n	0.26470765	Peri.	351.72448		-0.83246456				+0.54421909
a	2.4022879	Node	221.80093		-0.49897311				-0.81798388
e	0.0760716	Incl.	8.98162		-0.24089124				-0.18635440
P	3.72	H	12.5	G	0.15				

Kaneda

Residuals in seconds of arc

520503	839	1.2-	0.8-	831106	046	(3.1-	5.0-)	900916	400	0.1-	0.7+
520503	839	0.8-	0.5-	831106	046	3.2-	1.0-	900916	400	0.4-	0.9+
520524	839	2.2+	0.4-	871126	046	2.3+	0.3+	900916	400	0.5+	0.4+
520524	839	(8.8-	0.3-)	871126	046	(4.2+	0.3-)	900926	400	1.0+	0.3+
780501	330	0.6+	1.4+	890410	809	0.0	0.6+	900926	400	0.6-	0.4+
780506	330	0.1-	1.4-	890410	809	0.2-	0.8+	901017	400	0.5+	0.5-
780509	095	0.7-	0.0	890410	809	0.5+	1.3+	901017	400	0.2-	0.0

(4677)* 1990 SQ4 = 1968 UF1 = 1976 GZ4 = 1979 TX1 = 1979 WR = 1981 EF49

Discovered 1990 Sept. 26 by A. Takahashi and K. Watanabe at Kitami.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Kaneda

M 322.28217

(1950.0)

P

Q

n 0.17672573 Peri. 54.54467 +0.39655621 -0.91800869

a 3.1448712 Node 12.09266 +0.83941412 +0.36181203

e 0.1802093 Incl. 0.49115 +0.37165456 +0.16233332

P 5.58

H 12.3

G 0.15

Residuals in seconds of arc

681022	095	1.4+	0.5-	791122	095	2.7-	0.4-	901015	400	0.5-	0.4+
681023	095	0.4+	0.3+	810308	095	0.2+	0.6+	901015	400	0.3+	0.7+
681026	095	1.0+	0.0	900926	400	1.8-	1.0+	901022	400	0.2-	0.7+
760402	095	0.0	0.7+	900926	400	0.2-	1.4-	901022	400	2.1+	0.1-
791014	095	2.0-	2.4-	901011	400	0.2+	1.7-	901024	400	2.4+	2.1+
791116	095	(2.4-	6.4+)	901011	400	0.8-	0.1-	901024	400	0.3+	2.3+

(4678)* 1990 SS4 = 1973 SN3 = 1980 TE13 = 1989 ED7

Discovered 1990 Sept. 24 by R. H. McNaught at Siding Spring.

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Williams

M 7.63569

(1950.0)

P

Q

n 0.28918934 Peri. 322.42243 +0.99080517 +0.13128838

a 2.2647201 Node 30.08239 -0.10281923 +0.88769538

e 0.2138481 Incl. 3.73906 -0.08793927 +0.44131653

P 3.41

H 13.5

G 0.15

Residuals in seconds of arc

730925	095	1.2+	2.5-	890528	413	0.7-	0.3+	900925	675	1.0-	1.0+
801010	095	0.3+	0.3+	900923	675	1.4+	0.5+	900925	675	1.9-	1.7+
801017	095	0.6-	0.1-	900923	675	0.3+	0.7+	900928	413	1.5+	0.8-
890306	033	0.2+	1.3-	900924	413	1.5-	0.6-	901018	413	1.6+	0.7-
890306	033	0.6-	0.9-	900924	413	0.5-	0.7-				

(4679)* 1990 TR4 = 1969 VP1 = 1979 RR = 1979 SU8

Discovered 1990 Oct. 9 by R. H. McNaught at Siding Spring.

Id. G. V. Williams, N. S. Chernykh (d)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Williams

M 313.91572

(1950.0)

P

Q

n 0.18597260 Peri. 270.81825 +0.01177962 -0.99989734

a 3.0397421 Node 178.43537 +0.99433583 +0.01085156

e 0.0420804 Incl. 17.38254 +0.10562904 +0.00935647

P 5.30

H 11.8

G 0.15

Residuals in seconds of arc

691114	095	1.0-	1.7-	830507	413	0.1-	0.2-	901020	413	0.4+	1.2+
691201	095	0.7+	0.4+	880802	413	0.1+	0.4-	901022	413	(2.4+	4.1+)
790902	095	0.5-	1.3+	880802	413	0.6-	0.5-	901029	413	(3.4+	2.7+)
790924	095	1.1+	1.9-	901009	413	0.5+	0.6+	901112	413	0.6-	0.2-
820205	413	0.3+	0.6-	901020	413	0.3-	0.5-	901119	413	0.2-	0.3-

1928 RB = 1969 PS = 1988 CP6

Id. T. Kobayashi (MPC 14181)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Kobayashi

M	38.96797	(1950.0)		P		Q	
n	0.23989762	Peri.	172.38391	+0.94726128		+0.31714409	
a	2.5651854	Node	168.79479	-0.30507379		+0.93638054	
e	0.2512205	Incl.	13.69194	-0.09811242		+0.15036990	
P	4.11	H	13.1	G	0.15		

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

280905	024	(1.8+ 6.1+)	281015	024	0.1- 0.5+	900919	801	0.9- 0.0
280907	024	(0.03- 0.01-)X	690813	095	0.1+ 0.8-	900919	801	1.1- 0.1+
280908	024	2.6+ 0.4+	880210	033	0.4+ 1.1-	901027	894	2.2+ 0.5+
280908	024	(48.2+ 75.0+)	880211	033	1.0- 1.0-	901027	894	1.4+ 0.8-
280911	024	2.4- 1.7-	900918	801	0.9- 0.0			
280915	024	(0.07- 0.02-)	900918	801	1.0- 0.0			

1939 UB = 1973 UZ1 = 1984 JA = 1990 UG1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Kaneda

M	297.44523	(1950.0)		P		Q	
n	0.23270605	Peri.	269.71135	-0.51054823		-0.85263826	
a	2.6177667	Node	211.78230	+0.84868705		-0.47893845	
e	0.1330728	Incl.	12.18002	+0.13809706		-0.20886829	
P	4.24	H	12.0	G	0.15		

Residuals in seconds of arc

391007	062	1.4- 1.4+	731026	095	(18.8+ 1.8+)	901024	400	0.7- 2.3-
391018	062	1.4- 0.6+	840506	675	0.1+ 2.8-	901024	400	0.8+ 2.8-
391020	062	0.9- 0.6+	901022	400	(1.6+ 4.2-)	901113	400	1.4- 1.9+
391111	062	3.2+ 1.3+	901022	400	1.7+ 2.9-	901113	400	(3.7- 0.0)

1940 GO = 1957 GC = 1990 VL3

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

Marsden

M	307.29377	(1950.0)		P		Q	
n	0.22795719	Peri.	39.11525	-0.62471571		-0.74864570	
a	2.6540028	Node	90.71027	+0.64905284		-0.65587557	
e	0.1763537	Incl.	12.82434	+0.43412059		-0.09673079	
P	4.32	H	11.5	G	0.15		

Residuals in seconds of arc

400409	062	0.2- 1.7+	570401	062	0.9+ 0.8-	901116	402	0.5+ 1.4+
400410	062	0.2+ 1.7+	570401	062	1.5- 1.4-	901116	402	0.3- 1.7+
400413	062	3.4+ 0.3-	901115	809	0.2- 1.6-	901117	809	2.3- 1.7-
400413	062	0.3- 0.6+	901115	885	0.0 0.1+	901117	885	1.7+ 0.2-
400501	062	1.7- 0.5-	901115	402	1.1+ 0.7+	901117	885	1.5- 1.0+
570401	062	0.3- 0.6+	901115	885	0.5- 0.4-			
570401	062	0.5+ 0.3-	901115	402	0.8+ 0.9+			

1950 DE = 1950 BL1 = 1990 EX5 = 1990 DB1

Id. O. Kippes (d, NAZ 12), R. Nagata, G. V. Williams (d, MPC 17178)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nagata

M	21.95898	(1950.0)		P		Q	
n	0.17126629	Peri.	24.06250	-0.99388276		-0.05622616	
a	3.2113535	Node	152.20115	+0.03366552		-0.97398084	
e	0.1153633	Incl.	11.76055	+0.10518412		-0.21954486	
P	5.75	H	11.3	G	0.15		

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

500125	094	(0.06+ 0.06-)X	900216	399	0.2+ 1.4+	900222	220	1.1+ 4.3-
500217	024	2.9+ 0.7-	900216	399	0.1- 2.3+	900301	809	0.8- 0.7+
500223	024	2.0- 1.9+	900216	399	0.4- 1.8+	900301	809	0.2- 0.7+
500308	024	1.2- 1.9-	900221	220	(0.04+ 0.00-)	900301	809	0.1+ 0.8+
500322	024	0.9+ 0.6+	900221	220	(0.04+ 0.00-)	900302	809	1.4- 1.0+

900302 809	1.2-	1.1+	900303 809	0.5+	1.2+	900304 809	0.1+	1.8+
900302 809	0.8-	1.0+	900303 809	0.6+	1.1+	900304 809	0.6+	1.9+
900303 809	0.7+	1.3+	900304 809	0.2-	1.7+			

1971 BD3 = 1971 DF = 1976 JY5 = 1986 WX6 = 1990 VJ2
 Id. B. G. Marsden (d, MPC 9064), H. Kaneda, T. Urata
 Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	356.27732		(1950.0)		P		Q
n	0.24045414	Peri.	171.95985	+0.49122247			-0.86890002
a	2.5612258	Node	248.60082	+0.79543256			+0.47599586
e	0.1483714	Incl.	3.75260	+0.35494723			+0.13579656
P	4.10	H	12.8	G	0.15		

Kaneda

Residuals in seconds of arc

710127 805	0.0	1.9+	901111 374	0.1+	0.2+	901115 400	1.2+	1.1-
710129 805	0.2-	0.2-	901111 898	1.0-	1.4+	901117 898	(7.0+	3.9+)
710218 095	0.5+	0.4-	901111 374	0.4+	0.7+	901117 898	(3.8-	0.7+)
760503 809	0.1-	1.0-	901113 400	0.0	0.8-	901119 552	0.2+	2.6+
861128 010	1.1+	0.7-	901113 400	1.1+	2.7-	901119 552	1.6-	1.5+
861128 010	1.4-	2.2-	901114 898	2.6-	1.4+	901122 898	(1.2-	5.0+)
861128 010	0.7+	1.0-	901114 898	1.0+	0.3+	901122 898	(3.4-	1.8+)
901111 898	0.5-	0.1+	901115 400	1.1+	1.2-			

1971 UM = 1990 VB3

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	34.33213		(1950.0)		P		Q
n	0.26104066	Peri.	333.84922	+0.99814205			-0.05651989
a	2.4247331	Node	29.41803	+0.06079141			+0.89862672
e	0.1910542	Incl.	2.65573	+0.00410542			+0.43505807
P	3.78	H	13.5	G	0.15		

Nakano

Residuals in seconds of arc

711026 029	0.1+	0.3-	711110 029	0.3-	0.0	901111 374	0.4+	0.4+
711026 029	0.6+	0.3-	711110 029	0.8-	0.2+	901117 374	0.5+	0.3+
711027 095	0.6+	0.1+	711119 029	0.2-	0.9+	901117 374	0.0	0.6-
711030 029	0.2-	0.1-	901111 374	0.8-	0.6-			

1974 FJ = 1974 HT = 1981 BY = 1990 QH7

Id. C. M. Bardwell (d, MPC 5347), B. G. Marsden

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

M	176.46132		(1950.0)		P		Q
n	0.26582922	Peri.	188.71389	-0.99980254			+0.01626470
a	2.3955309	Node	352.19084	-0.00893430			-0.88110007
e	0.1290374	Incl.	4.81987	-0.01774986			-0.47265010
P	3.71	H	14.0	G	0.15		

Marsden

Residuals in seconds of arc

740322 805	0.9+	0.6-	740425 805	0.2+	0.0	900820 809	0.8+	0.6+
740323 805	0.9+	3.1+	810130 095	0.0	0.1-	900826 809	1.5-	0.1+
740422 805	1.4-	0.2-	900820 809	1.6+	0.6+	900826 809	0.7-	0.5-
740424 805	0.3-	1.7-	900820 809	0.5+	0.5+	900826 809	1.2-	0.2-

1974 FO = 1974 HL1 = 1975 TM = 1990 QV3

Id. C. M. Bardwell (d, MPC 5347), R. Nagata

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	62.60671		(1950.0)		P		Q
n	0.25952202	Peri.	283.46278	+0.11706683			+0.99306522
a	2.4341831	Node	353.23220	-0.87195641			+0.09756825
e	0.1614645	Incl.	5.26243	-0.47538129			+0.06558890
P	3.80	H	13.2	G	0.15		

Nagata

Residuals in seconds of arc

740322	805	1.1+	1.0-	751003	095	1.0-	1.8+	900827	675	0.5+	1.4-
740323	805	0.5-	4.0+	900822	675	0.2-	1.3+	900829	675	0.3+	0.7+
740424	805	(40.4+	12.1-)	900822	675	0.6-	1.3+	900829	675	0.3-	0.8+
740425	805	0.5+	1.1-	900827	675	0.1+	2.5-				

1975 UE = 1986 PB4

Id. T. Kobayashi (MPC 13151)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

				(1950.0)		P		Nakano		Q	
M	39.06718										
n	0.26122432	Peri.	142.02839			+0.79888269		+0.60148648			
a	2.4235965	Node	180.99594			-0.56103714		+0.74474656			
e	0.2077294	Incl.	2.26163			-0.21684967		+0.28907885			
P	3.77	H	14.3			G	0.15				

Residuals in seconds of arc

751027	026	2.0-	0.3-	860803	046	1.0-	0.7-	860809	046	2.5+	0.5+
751028	026	1.5+	0.2-	860805	046	1.9+	1.5+	860809	046	0.2+	0.6-
751029	026	0.7+	0.0	860805	046	(3.2+	3.2+)	900921	372	1.4-	0.0
860802	046	1.4-	0.9-	860807	046	0.6-	0.6-	900921	372	1.1+	0.7+
860802	046	0.8+	0.2+	860807	046	1.6-	1.1-				
860803	046	0.5-	0.8+	860809	095	0.2-	0.6+				

1977 EM5 = 1986 RK3

Id. T. Kobayashi (MPC 14945)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

				(1950.0)		P		Nakano		Q	
M	359.92483										
n	0.26647749	Peri.	223.65798			+0.75311832		-0.65784326			
a	2.3916394	Node	177.44343			+0.63999094		+0.72997488			
e	0.2106814	Incl.	9.57457			+0.15239556		+0.18541553			
P	3.70	H	14.2			G	0.15				

Residuals in seconds of arc

770312	381	1.2-	0.7+	770315	381	1.1-	0.2-	860907	071	1.4+	0.2+
770312	381	0.5+	0.4+	860812	095	1.0+	1.8+	901028	402	1.1+	0.3-
770314	381	0.0	0.2+	860906	071	0.8-	0.6-	901028	402	0.6-	0.7+
770314	381	1.3+	1.7-	860906	071	2.2-	1.8-	901108	413	0.3-	0.4-
770315	381	0.3+	0.1-	860907	071	0.8+	0.1-	901109	413	0.3-	0.0

1977 TC1 = 1977 TB5 = 1948 TD = 1990 VA2

Id. O. Kippes (d, MPC 5347), H. Kaneda

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

				(1950.0)		P		Kaneda		Q	
M	50.04251										
n	0.30643849	Peri.	115.36446			+0.93234622		+0.35946193			
a	2.1789161	Node	223.59734			-0.34870287		+0.86545615			
e	0.2111842	Incl.	3.23855			-0.09558682		+0.34895956			
P	3.22	H	14.4			G	0.15				

Residuals in seconds of arc

481008	062	0.7-	1.2+	771018	026	1.2-	0.8-	901112	399	0.5-	2.0-
481008	062	0.0	0.9+	771019	026	0.5-	0.0	901112	399	1.0-	2.8-
771007	095	1.0-	0.2-	771103	026	(3.9-	2.7+)	901113	400	0.1-	1.2+
771012	026	1.1+	0.4-	771110	026	0.9-	1.6+	901113	400	1.7+	2.1+
771013	026	0.1-	2.7-	771110	026	0.8+	1.9+	901114	403	1.6+	1.1+ Y
771017	095	2.3+	0.6-	901112	399	(6.7-	2.0-)	901114	403	1.7-	0.1+ Y

1980 FO1 = 1973 YB2 = 1987 SM11 = 1990 DN3

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 176.39536

(1950.0)

P

Nagata

Q

n	0.19902179	Peri.	90.54282	+0.71792466	-0.69594354
a	2.9053757	Node	313.55976	+0.62971250	+0.65888996
e	0.0693965	Incl.	1.24214	+0.29672604	+0.28552866
P	4.95	H	12.4	G	0.15

Residuals in seconds of arc

731220	095	0.2+	0.2+	800317	809	0.0	0.1-	900226	809	1.0-	0.9-
800316	809	0.3-	0.6+	800323	809	0.2+	0.1+	900226	809	0.5-	0.9-
800316	809	0.7+	0.2+	870916	809	0.7-	0.7+	900226	809	0.2-	1.0-
800316	809	0.1+	0.6+	870916	809	0.2-	0.5+	900227	809	0.5+	0.9+
800316	809	0.3+	0.2-	870916	809	1.0+	0.2+	900227	809	0.9+	0.8+
800317	809	0.6+	0.0	900224	809	0.2+	0.0	900227	809	1.2+	0.8+
800317	809	0.1-	0.5-	900224	809	0.3+	0.0				
800317	809	0.3+	0.5-	900224	809	0.5+	0.1-				

1980 FV2 = 1990 QX9

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 55.12590

(1950.0)

P

Williams

Q

n	0.22456645	Peri.	296.36764	+0.37764018	+0.92581984
a	2.6806460	Node	355.72759	-0.75674368	+0.29883406
e	0.1878205	Incl.	12.14174	-0.53359807	+0.23142133
P	4.39	H	13.0	G	0.15

Residuals in seconds of arc

800316	809	0.5-	0.6+	800317	809	0.3-	0.2+	900829	675	1.7+	0.2-
800316	809	0.0	0.1+	800317	809	0.0	0.5-	900914	675	1.0+	0.2+
800316	809	0.1-	0.5-	800317	809	0.2+	0.0	900914	675	0.7-	0.2-
800316	809	0.2-	0.6-	800323	809	0.1-	0.2+	900920	675	0.2-	0.1+
800317	809	0.3+	0.5-	900829	675	1.8-	0.2+	900920	675	0.6+	1.0-

1980 FZ3 = 1983 CY5 = 1990 EF6

Id. H. Kaneda, R. Nagata

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 134.10630

(1950.0)

P

Kaneda

Q

n	0.29188938	Peri.	85.97213	+0.24603996	-0.96897431
a	2.2507323	Node	349.69300	+0.82888950	+0.22292315
e	0.1736224	Incl.	7.55317	+0.50240078	+0.10674294
P	3.38	H	14.0	G	0.15

Residuals in seconds of arc

800316	809	0.5-	0.5+	800323	809	0.8-	0.4-	900303	809	0.6+	0.4-
800316	809	0.9+	0.4+	830202	095	0.0	0.0	900303	809	0.9+	0.2-
800316	809	0.1-	0.5-	900302	809	0.6-	0.1+	900303	809	1.5+	0.0
800316	809	0.1-	0.4-	900302	809	0.0	0.3-	900304	809	0.6-	0.3+
800317	809	0.3+	0.2-	900302	809	0.5+	0.4-	900304	809	0.4-	0.3+
800317	809	0.0	0.3+	900303	809	1.0-	0.1+	900304	809	0.0	0.4+
800317	809	0.2+	0.4+	900303	809	0.6-	0.1+				
800317	809	0.3+	0.2-	900303	809	0.4-	0.1+				

1980 KM = 1986 TF18 = 1990 TA5

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 72.39406

(1950.0)

P

Williams

Q

n	0.21575207	Peri.	46.66563	+0.07661385	+0.99429658
a	2.7531681	Node	227.88382	-0.94124825	+0.04757770
e	0.1029696	Incl.	5.74030	-0.32891040	+0.09544987
P	4.57	H	13.5	G	0.15

Residuals in seconds of arc

800522	809	0.1-	0.2+	800522	809	0.4-	0.8+	800523	809	0.9-	0.0
800522	809	0.3-	0.4+	800523	809	1.0-	0.0	800523	809	0.2-	0.0

800524	809	0.3+	0.0	800602	809	0.3+	1.0-	800606	809	0.5-	2.1-
800524	809	1.0-	0.2+	800602	809	0.4-	1.2+	800606	809	0.1+	0.2+
800524	809	1.1-	0.0	800603	809	0.4-	0.4+	800606	809	0.2+	0.1+
800524	809	0.6-	0.2+	800603	809	0.3+	0.2+	800611	809	0.3-	0.1-
800524	809	0.5-	0.4-	800603	809	0.3+	0.6+	800611	809	0.3-	1.1+
800525	809	1.3+	0.6+	800604	809	0.5+	0.7-	861012	095	0.1+	0.4-
800525	809	1.2+	0.0	800604	809	0.2+	0.2-	901009	413	0.2-	1.0-
800525	809	0.5+	0.2+	800604	809	0.3-	0.4-	901009	413	0.2-	1.0+
800531	809	0.8+	0.6-	800605	809	0.5+	0.0	901011	413	0.3+	0.2+
800601	809	1.0+	0.2-	800605	809	0.3+	0.3-				
800602	809	0.1+	0.9-	800605	809	0.4+	0.1-				

1980 LY = 1987 UQ2

Id. T. Kobayashi (MPC 13152)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	82.32691	(1950.0)		P		Bowell	Q
n	0.30924419	Peri.	174.08617	+0.08539544		+0.99332261	
a	2.1657169	Node	100.79442	-0.91729264		+0.10877538	
e	0.1583711	Incl.	4.52947	-0.38894966		-0.03844620	
P	3.19	H	14.9	G	0.15		

Residuals in seconds of arc

800610	675	0.2+	0.7+	800620	675	0.5+	0.7-	900922	675	0.1+	0.5-
800612	675	(5.1+	1.8+)	871027	054	0.8+	0.3-	900922	675	1.0-	0.3-
800618	675	0.2+	0.5+	871027	054	1.4-	0.2-	900924	675	0.4+	0.5+
800619	675	0.9-	0.6-	871030	054	0.7+	0.2+	900924	675	0.4+	0.6+

1980 PX = 1990 VR1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	50.31734	(1950.0)		P		Nagata	Q
n	0.30468616	Peri.	175.64788	+0.90902663		+0.41652126	
a	2.1872625	Node	159.72059	-0.38349211		+0.84869476	
e	0.2380606	Incl.	2.22224	-0.16310851		+0.32592521	
P	3.23	H	14.3	G	0.15		

Residuals in seconds of arc

800806	046	1.9-	1.6-	800815	046	0.5-	0.0	800903	046	0.5-	1.3-
800806	046	1.1+	0.4+	800815	046	3.2+	2.0+	800903	046	0.2+	0.7+
800807	046	0.6+	0.0	800817	046	2.4-	1.1-	901110	877	1.9-	1.1+
800807	046	1.4-	0.1+	800817	046	0.1+	0.4+	901110	877	0.4+	0.9-
800814	046	0.6+	1.1+	800902	046	0.2+	0.2+	901111	877	0.2+	0.3+
800814	046	0.3+	0.8+	800902	046	0.2-	1.9-	901111	877	1.0+	0.1-

1980 TH3 = 1983 GU1 = 1990 VB1

Id. T. Urata (k), S. Nakano

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

M	84.04796	(1950.0)		P		Urata	Q
n	0.20622396	Peri.	345.51578	+0.81641072		+0.57741150	
a	2.8373364	Node	339.20888	-0.52742940		+0.73970693	
e	0.0727248	Incl.	1.34567	-0.23514199		+0.34558589	
P	4.78	H	12.5	G	0.15		

Residuals in seconds of arc

801010	095	0.3+	2.6+	801104	330	2.2+	2.4-	901018	033	0.5-	1.2-
801014	511	0.5+	0.6+	801107	330	2.3+	0.5-	901026	385	0.8-	1.5-
801014	511	0.8-	0.3+	801110	330	1.4+	0.5-	901026	385	(1.1+	3.8+)
801014	511	2.2-	0.1-	830409	095	0.3-	0.8-	901110	887	0.9-	1.4+
801014	330	0.4-	0.4-	901014	033	1.6+	0.2-	901110	887	0.6+	0.2-
801028	330	1.5-	0.0	901015	033	1.0+	0.1-	901111	385	1.2-	1.1+
801031	330	0.7+	0.2-	901015	033	1.1+	0.2-	901111	385	1.1-	1.2+
801103	330	1.6-	0.7-	901018	033	0.5+	0.1+				

1980 VA = 1980 VL = 1990 RX

Id. B. G. Marsden (d, MPC 5677), E. Bowell

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Bowell

M	344.47696		(1950.0)		P		Q
n	0.29136501	Peri.	232.78178		+0.74777460		-0.66386345
a	2.2534320	Node	168.79927		+0.62551152		+0.69888869
e	0.2636652	Incl.	3.21214		+0.22263982		+0.26615770
P	3.38	H	15.0	G	0.15		

Residuals in seconds of arc

801013	095	0.1+	1.2+	801113	372	1.4-	0.7+	801204	688	1.1+	0.1+
801108	688	(2.1+	3.4-)	801113	381	0.6+	0.4-	801206	879	0.4-	0.9+
801108	688	(2.1+	3.8-)	801114	372	1.5+	0.9-	801206	879	(1.0+	4.0+)
801108	879	1.3-	0.3-	801114	386	1.9+	0.4-	801210	381	(3.2-	0.5-)
801108	879	0.2+	1.0-	801114	381	0.3-	0.1+	801210	381	0.2+	1.5+
801109	879	(3.1-	2.2+)	801114	386	1.1+	1.4-	801230	372	(3.4+	26.7+)
801111	879	1.4-	1.0+	801115	879	0.4+	0.0	801230	372	(3.2+	26.0+)
801111	879	(2.5-	0.5+)	801115	879	(3.0+	1.3+)	900914	675	0.9-	0.2-
801111	381	0.3+	0.2-	801129	688	(2.4+	2.2-)	900914	675	1.1+	0.1+
801111	381	0.5+	0.2-	801129	688	(1.8+	2.1-)	900914	675	1.0-	0.6+
801113	879	0.5-	0.9+	801129	879	0.6-	1.7-	900914	675	0.7+	0.1-
801113	879	0.3+	0.6+	801129	879	0.8-	1.8-	900920	675	0.8-	0.3-
801113	372	1.4-	1.7+	801129	879	0.1-	0.0	900920	675	1.0+	0.5-

1980 XX = 1990 WG

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nagata

M	14.70536		(1950.0)		P		Q
n	0.29502669	Peri.	308.17831		+0.81466958		-0.57277686
a	2.2347478	Node	86.94461		+0.55642266		+0.72790802
e	0.1452641	Incl.	5.21564		+0.16342368		+0.37693046
P	3.34	H	14.4	G	0.15		

Residuals in seconds of arc

801130	095	0.9-	1.9+	901116	877	2.5-	0.8-	901122	877	0.0	1.0-
801207	330	0.1+	0.3+	901116	877	2.1+	0.5+				
801210	095	0.7+	1.5-	901122	877	0.6+	0.7+				

1981 EE9

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

Bardwell

M	352.67654		(1950.0)		P		Q
n	0.17858031	Peri.	140.43975		+0.46136916		-0.88160453
a	3.1230663	Node	281.87572		+0.78600343		+0.45820665
e	0.2704805	Incl.	5.83916		+0.41150591		+0.11322593
P	5.52	H	14.0	G	0.15		

Residuals in seconds of arc

791122	675	0.1+	0.3-	810301	413	0.4-	1.6+	810315	413	2.1+	0.9-
791124	675	0.4-	0.4-	810301	413	2.9+	0.5-	810406	413	1.8-	0.5+
791125	675	0.1+	0.3+	810307	413	0.1-	0.3-	810406	413	0.1+	0.5-
791126	675	0.3+	0.3+	810307	413	0.5+	0.1-	810412	413	0.5-	0.8+
791127	675	0.1+	0.3+	810311	413	3.5-	1.3+	810412	413	0.5-	0.9+
810202	413	0.4+	0.1-	810311	413	1.4+	1.0-	810429	413	0.4-	1.8-
810214	413	0.6+	0.5-	810315	413	0.9-	0.3+	860213	801	0.0	0.0

1981 EU13 = 1990 WQ1

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

Marsden

M	316.11818		(1950.0)		P		Q
n	0.28057945	Peri.	273.75586		-0.37690170		-0.92505329
a	2.3108212	Node	198.60232		+0.89760677		-0.35221463
e	0.1866019	Incl.	8.49677		+0.22857645		-0.14220154
P	3.51	H	15.5	G	0.15		

Residuals in seconds of arc

810209 413	1.4+	0.3-	810308 413	0.7+	0.3-	810501 413	0.1-	1.0-
810212 413	1.2-	0.8-	810312 413	1.3-	1.1+	810503 413	0.4+	0.8-
810301 413	0.6-	0.3+	810406 413	0.2+	0.3-	901118 809	1.3+	0.7+
810301 413	0.4-	0.1-	810408 413	0.2-	0.7+	901120 809	1.3-	1.0-
810306 413	0.2+	0.4+	810408 413	1.3+	0.5-			
810308 413	0.8-	1.4+	810409 413	0.5+	0.4-			

1981 ET22 = 1990 QL7

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 261.03015

(1950.0)

P

Nakano

Q

n	0.26572388	Peri.	88.98457	-0.42611392	-0.90444953
a	2.3961592	Node	26.26511	+0.81101256	-0.39167803
e	0.1583143	Incl.	2.58380	+0.40085603	-0.16899517
P	3.71	H	14.5	G	0.15

Residuals in seconds of arc

810209 413	0.4+	0.2+	810311 413	1.1+	0.4-	810411 413	0.9+	0.4+
810213 413	0.7+	0.2+	810316 413	1.2-	0.3-	810426 413	(4.4+	1.5-)
810302 413	2.0-	0.0	810316 413	0.7+	0.5-	810502 413	0.5+	0.1+
810302 413	0.8+	0.8-	810329 413	0.9-	0.4-	900820 809	0.2+	0.7-
810303 413	1.9-	0.1-	810329 413	0.4-	0.2+	900820 809	0.9-	0.8-
810303 413	0.6+	0.1-	810407 413	0.1+	0.7-	900820 809	0.5-	1.3-
810307 413	0.1+	0.2+	810407 413	1.2+	0.7-	900826 809	1.2+	1.1+
810307 413	1.1+	0.3-	810408 413	1.0-	1.4+	900826 809	0.1-	0.8+
810308 095	1.7-	1.0+	810408 413	1.4+	0.2+	900826 809	0.5+	0.1+
810311 413	0.4-	0.2-	810411 413	0.3-	0.1+			

1981 EX24

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 3.78384

(1950.0)

P

Nakano

Q

n	0.17110371	Peri.	259.27617	+0.71945234	-0.69442381
a	3.2133875	Node	144.70305	+0.64554705	+0.66178622
e	0.1424190	Incl.	1.26959	+0.25623688	+0.28251473
P	5.76	H	13.7	G	0.15

Residuals in seconds of arc

781003 675	0.7+	0.8-	810311 413	0.1+	0.8-	810426 413	1.0+	0.4-
781004 675	0.2+	1.3-	810311 413	1.8-	0.1+	810501 413	0.4+	0.0
810209 413	2.5+	0.0	810315 413	1.5-	0.1+	901113 372	2.4+	0.1-
810213 413	(0.7+	4.1-)	810315 413	0.9+	0.1-	901113 372	1.2-	0.8+
810302 413	0.1+	0.2-	810405 413	1.0-	0.8+	901114 372	0.1+	0.2+
810302 413	1.1+	2.6-	810405 413	0.4-	0.6+	901114 372	1.5-	0.4-
810306 413	2.2-	0.2-	810406 413	1.1-	1.4+			
810306 413	(4.6+	2.0-)	810406 413	1.3+	0.7-			

1981 ET25 = 1990 UT3

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

M 109.84078

(1950.0)

P

Marsden

Q

n	0.26210189	Peri.	100.30654	+0.21770066	+0.97600624
a	2.4181885	Node	182.28075	-0.93219324	+0.20662741
e	0.1014183	Incl.	6.16166	-0.28917502	+0.06867994
P	3.76	H	14.5	G	0.15

Residuals in seconds of arc

810212 413	0.3-	0.4+	810311 413	0.9-	0.1-	810405 413	3.0+	2.6-
810212 413	0.1-	0.3+	810311 413	0.3+	0.4-	810406 413	1.5-	1.3+
810302 413	0.8-	0.9+	810315 413	0.1-	0.3+	810406 413	1.6+	1.3-
810306 413	0.7-	0.0	810315 413	1.1+	0.1-	810407 413	0.3-	0.9+
810306 413	0.2-	0.0	810405 413	1.7-	1.0+	810407 413	0.2+	0.4+

810410	413	0.1+	0.6+	810501	413	1.1-	1.0+	901020	809	1.1+	0.6+
810410	413	0.5-	1.2-	901016	809	0.8+	0.3-				
810426	413	1.6+	1.4-	901020	809	1.9-	0.5-				

1981 EF30 = 1990 WL1

Epoch	1990 Nov. 5.0	ET =	JDE 2448200.5	(J-P)		Marsden
M	283.59792		(1950.0)		P	Q
n	0.27509283	Peri.	333.30877	-0.71153769		-0.70188108
a	2.3414456	Node	161.98746	+0.66211778		-0.68539675
e	0.0652236	Incl.	6.09238	+0.23518961		-0.19389234
P	3.58	H	14.5	G	0.15	

Residuals in seconds of arc

810202	413	0.2+	0.3-	810307	413	0.6-	1.2+	810316	413	1.9+	0.5-
810213	413	0.5+	0.5-	810307	413	1.4+	0.7-	810502	413	0.1-	0.2-
810302	413	2.0-	2.2+	810308	095	0.8-	3.7-	901118	809	0.8+	0.2+
810302	413	0.1-	0.4-	810311	413	0.0	1.1+	901120	809	0.8-	0.1-
810303	413	2.1-	1.0+	810311	413	0.7+	0.1+				
810303	413	1.2+	0.7-	810316	413	0.3-	1.3+				

1981 EQ31 = 1990 WR

Epoch	1990 Nov. 5.0	ET =	JDE 2448200.5	(J-P)		Marsden
M	340.05351		(1950.0)		P	Q
n	0.17439693	Peri.	270.02794	+0.20728651		-0.97800514
a	3.1728122	Node	167.93304	+0.93587227		+0.19133818
e	0.1440247	Incl.	6.37160	+0.28491297		+0.08304002
P	5.65	H	14.5	G	0.15	

Residuals in seconds of arc

810209	413	0.2-	1.0+	810306	413	1.1+	1.6-	810501	413	0.7+	0.5+
810213	413	1.1+	0.9+	810315	413	0.8-	0.0	901118	809	0.1+	0.6-
810302	413	0.9-	1.3-	810315	413	1.0-	0.6+	901120	809	0.1-	0.6+

1981 EH35 = 1990 TN10

Epoch	1990 Nov. 5.0	ET =	JDE 2448200.5	(J-P)		Marsden
M	329.62756		(1950.0)		P	Q
n	0.27769674	Peri.	113.09089	+0.20833655		-0.97752420
a	2.3267858	Node	324.83541	+0.87554058		+0.20110995
e	0.2246750	Incl.	3.21353	+0.43591808		+0.06325522
P	3.55	H	17.0	G	0.15	

Residuals in seconds of arc

810209	413	0.3+	1.6-	810311	413	2.4+	0.2-	901010	033	0.1-	0.2+
810213	413	0.4+	0.9-	810316	413	3.2-	2.3+	901011	033	0.1-	0.1+
810302	413	3.8-	1.3+	810316	413	3.5+	0.9-	901011	033	0.2+	0.1-
810302	413	0.6+	0.1+	810430	413	0.4+	1.1-				
810307	413	0.4-	1.1+	810502	413	0.0	0.3-				

1981 QV2 = 1990 VK3

Epoch	1990 Nov. 5.0	ET =	JDE 2448200.5			Nakano
M	43.25040		(1950.0)		P	Q
n	0.23127986	Peri.	228.84604	+0.99107236		-0.07061952
a	2.6285173	Node	134.86042	+0.10086166		+0.95183697
e	0.1203351	Incl.	9.18018	-0.08719238		+0.29836096
P	4.26	H	13.4	G	0.15	

Residuals in seconds of arc

810823	809	0.1-	0.3+	810825	809	0.5+	0.4+	810828	809	0.6-	0.5-
810823	809	0.2-	0.3+	810825	809	0.3-	0.8-	810828	809	0.8-	0.4-
810823	809	0.2-	0.8+	810825	809	0.7+	0.2+	810828	809	0.7-	1.1-
810824	809	0.3+	0.6+	810827	809	0.8-	1.5-	810831	809	0.8+	0.6+
810824	809	0.5+	0.3+	810827	809	(2.4-	2.3-)	810831	809	0.8-	0.9-
810824	809	0.8+	0.2+	810827	809	(2.0-	2.4-)	810831	809	1.9-	0.5-

810902	809	0.2-	0.4+	810904	809	0.9+	0.0	810909	809	1.0-	0.2-
810902	809	0.1+	0.2-	810905	809	0.7+	0.5+	810909	809	0.7-	0.2-
810902	809	0.1+	0.4+	810905	809	0.5+	0.4+	901115	402	1.0+	1.0+
810903	809	0.1-	0.1+	810905	809	1.1+	0.2-	901115	402	0.8+	0.4+
810903	809	0.0	0.8+	810906	809	1.7+	1.6+	901116	402	1.1-	0.9-
810903	809	0.0	1.0-	810906	809	1.1+	0.2+	901116	402	0.7-	0.5-
810904	809	0.9-	0.4-	810906	809	(2.5+	0.6+)				
810904	809	0.6+	0.1+	810909	809	1.1-	0.1-				

1981 UU11 = 1981 WF = 1976 SP8 = 1990 TC5

Id. T. Furuta (JAM 2060), S. Nakano

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 315.46728

(1950.0)

P

Q

n 0.20942171 Peri. 216.77121 +0.57046575 -0.81989278

a 2.8083738 Node 198.60032 +0.78504183 +0.56164732

e 0.1298963 Incl. 8.73178 +0.24140867 +0.11103207

P 4.71 H 13.4 G 0.15

Residuals in seconds of arc

760928 095 1.0- 3.7+ 811028 095 2.6+ 1.3- 901009 413 0.3- 2.6-

811022 095 0.7+ 1.8+ 811120 688 2.5- 0.7+ 901009 413 0.9- 0.5-

811024 095 (5.1+ 1.7-) 811120 688 0.8- 1.8- 901011 413 2.2+ 0.5-

1982 DC2 = 1989 GF5

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 200.02619

(1950.0)

P

Nagata

Q

n 0.28849601 Peri. 344.20191 -0.84744920 -0.53035924

a 2.2683471 Node 163.70462 +0.49564386 -0.80624547

e 0.1437119 Incl. 4.78975 +0.19017627 -0.26208264

P 3.42 H 15.0 G 0.15

Residuals in seconds of arc

820216 046 2.8+ 1.5- 820221 046 1.6+ 0.5- 890412 372 0.6+ 1.6- Y

820216 046 1.4- 1.6+ 820221 046 0.7+ 0.5- 890412 372 0.1+ 1.7- Y

820220 046 0.5- 1.1- 890411 372 0.7- 2.0+ Y

820220 046 0.3+ 0.8+ 890411 372 2.3+ 0.5+ Y

1982 DX3 = 1989 GY4 = 1990 RJ

Id. A. Lowe, G. V. Williams

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 282.19500

(1950.0)

P

Williams

Q

n 0.29288908 Peri. 83.24607 +0.13523943 -0.99080985

a 2.2456079 Node 358.97160 +0.84574059 +0.11674002

e 0.0082775 Incl. 7.93262 +0.51617162 +0.06831989

P 3.37 H 14.5 G 0.15

Residuals in seconds of arc

820220 033 0.2+ 0.1- 890408 809 0.4+ 0.7+ 890411 809 0.0 0.1-

820220 033 0.2+ 0.4+ 890408 809 0.3+ 0.5- 900914 675 0.3- 0.1-

820220 033 0.3- 0.5- 890408 809 0.5+ 0.5- 900914 675 0.2+ 0.2+

820221 033 0.3+ 0.2+ 890411 809 0.6- 0.2+ 900919 675 0.0 0.1-

820221 033 0.3- 0.0 890411 809 0.5- 0.2+ 900919 675 0.1+ 0.0

1982 ST = 1990 SX1

Id. G. V. Williams (MPC 17200)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 354.47733

(1950.0)

P

Williams

Q

n 0.36881578 Peri. 44.97151 +0.87050756 -0.48181141

a 1.9257344 Node 343.01288 +0.29613725 +0.67567979

e 0.1041217 Incl. 20.09345 +0.39308946 +0.55795572

P 2.67 H 14.0 G 0.15

Residuals in seconds of arc

820919	675	(0.8- 4.1-)	890304	675	0.9- 0.9-	900925	675	0.2- 0.0
820919	675	(4.2+ 10.1+)	890304	675	0.4- 0.6-	900925	675	1.5+ 0.5-
820920	675	0.1- 0.4+	890306	675	1.6+ 1.0+	901014	675	0.7+ 0.7-
820920	675	0.4- 0.4-	890306	675	0.1+ 1.0+	901014	675	0.2+ 0.4-
820920	675	(6.3+ 17.3+)	900922	675	0.5- 1.4+	901017	675	0.4- 0.6+
820920	675	(9.5+ 20.8+)	900922	675	2.3- 0.8+	901017	675	0.3+ 0.0
821011	675	0.4+ 0.5+	900924	675	0.3- 0.1-			
821013	675	0.3- 0.1-	900924	675	1.1+ 1.1-			

1982 VY2 = 1986 PU2 = 1989 CQ8

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nagata

M	156.36055		(1950.0)		P		Q
n	0.19630512	Peri.	349.75196		-0.38265066		-0.92283304
a	2.9321192	Node	122.73316		+0.85129344		-0.37078592
e	0.0499205	Incl.	3.01503		+0.35899574		-0.10438859
P	5.02	H	13.0	G	0.15		

Residuals in seconds of arc

821114	381	0.1- 0.5+	821214	381	0.3+ 0.7-	890212	809	0.8- 0.1+
821114	381	0.4- 0.4+	860801	675	(17.0- 2.1-)	890212	809	0.1+ 0.0
821213	381	0.3- 0.2-	860801	675	(16.6- 0.8-)	890212	809	0.5+ 0.2-
821213	381	0.4+ 0.1-	860802	675	0.4+ 0.4-			
821214	381	0.3- 0.1-	860802	675	0.6- 0.2+			

1982 YL1 = 1956 XS = 1966 RK = 1976 SH10

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

Ichikawa

M	226.66295		(1950.0)		P		Q
n	0.19241162	Peri.	7.31323		+0.76435272		-0.64173998
a	2.9715477	Node	32.87844		+0.58555555		+0.65010057
e	0.2396954	Incl.	6.63536		+0.26998076		+0.40686491
P	5.12	H	12.4	G	0.15		

Residuals in seconds of arc

561204	760	1.0+ 3.3+	760916	808	1.8- 1.7+	830109	095	0.3- 1.6-
561204	760	0.7- 4.4-	821223	095	1.2+ 1.3+	830114	095	0.5- 0.3+
660915	095	0.9+ 1.0-	821224	095	1.8+ 0.2+			
760916	808	0.7+ 0.9+	830106	095	2.4- 1.8+			

1983 RW3 = 1990 RJ1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Bowell

M	34.87894		(1950.0)		P		Q
n	0.28207896	Peri.	331.38317		+0.80346621		+0.59445178
a	2.3026199	Node	351.90224		-0.49235391		+0.63258551
e	0.1713613	Incl.	13.42212		-0.33470834		+0.49645006
P	3.49	H	15.0	G	0.15		

Residuals in seconds of arc

830904	809	0.6- 0.2+	830909	809	0.7+ 2.1-	830916	809	1.1+ 0.3-
830904	809	0.4- 0.3+	830914	809	0.3+ 1.3-	830916	809	1.4+ 0.3-
830904	809	0.1+ 0.3+	830915	809	2.3- 0.7+	900914	675	0.2+ 1.4-
830907	809	0.0 0.9+	830915	809	2.1- 0.3+	900914	675	0.2+ 0.2-
830907	809	0.3+ 0.9+	830915	809	1.6- 0.1+	900920	675	0.2- 0.8+
830907	809	0.9+ 1.0+	830915	809	2.2- 1.8+	900920	675	0.3+ 0.1+
830909	809	1.0+ 2.0-	830915	809	3.0+ 0.1+			

1983 UC = 1969 UT1 = 1990 TC8

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Marsden
 M 10.45052 (1950.0) P Q
 n 0.28385185 Peri. 351.15218 +0.89616156 -0.43963990
 a 2.2930266 Node 35.12723 +0.41321702 +0.77750138
 e 0.1425843 Incl. 5.99484 +0.16169774 +0.44967584
 P 3.47 H 14.0 G 0.15

Residuals in seconds of arc

691017	095	0.1+	0.0	831106	046	1.6+	0.9-	901013	033	0.1+	0.7+
831016	046	(4.7-	1.3+)	831106	046	1.0+	0.4-	901014	033	0.5-	0.3+
831016	046	1.4-	0.5-	831107	046	(3.5+	3.5+)	901018	033	0.0	0.1-
831102	046	1.7-	0.4+	831107	046	0.3-	1.5+				
831102	046	1.2+	1.6-	901013	033	0.1-	0.6+				

1983 WL

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
 M 322.60958 (1950.0) P Q
 n 0.27656030 Peri. 20.76526 +0.03638553 -0.98509276
 a 2.3331509 Node 67.46320 +0.88923708 -0.04485404
 e 0.0911839 Incl. 10.48821 +0.45599726 +0.16607337
 P 3.56 H 13.3 G 0.15

Residuals in seconds of arc

831127	330	(3.1+	4.0+)	831205	046	1.4+	1.8+	840104	688	0.9-	0.7-
831128	688	1.2+	0.5-	831206	688	1.0+	0.0	840104	688	(5.6-	3.6-)
831128	688	0.1-	0.5-	831206	688	0.2+	0.7+	850513	675	(0.5+	6.9-)
831201	688	0.1-	0.1-	831208	046	2.6-	1.9+	850515	675	0.8-	1.6-
831201	688	2.3+	0.7-	831208	046	1.7-	0.9+	901020	402	0.1-	0.1+
831204	046	(4.9-	0.5+)	831209	688	0.7-	0.4+	901020	402	0.3+	0.1-
831204	046	1.9-	1.7-	831209	688	1.2+	0.3-	901021	402	0.3-	1.2-
831205	688	2.5+	1.1-	831229	688	2.2-	0.5-	901021	402	0.8+	0.4-
831205	688	1.0-	0.2+	831229	688	0.7+	1.1-				
831205	046	0.1-	1.6+	840102	688	0.8+	0.7-				

1983 WM = 1990 VJ1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
 M 333.42418 (1950.0) P Q
 n 0.27887487 Peri. 189.84772 +0.12880617 -0.98707101
 a 2.3202234 Node 252.79885 +0.91645496 +0.15523288
 e 0.0781426 Incl. 5.73107 +0.37883937 -0.03991956
 P 3.53 H 13.6 G 0.15

Residuals in seconds of arc

831128	688	1.8+	1.1-	831205	688	0.3+	0.0	840102	688	1.3+	1.4+
831128	688	1.3-	1.8+	831205	688	(4.8-	1.7-)	840104	688	0.8-	1.3-
831129	688	0.1+	0.5+	831206	688	1.6-	0.2-	840104	688	0.2+	0.7-
831129	688	2.0+	0.6-	831206	688	2.2-	0.8+	901111	898	(4.2+	4.4+)
831201	688	1.3+	1.4+	831209	688	0.3+	0.2-	901111	898	2.4+	0.5+
831201	688	1.0-	1.7-	831209	688	0.1-	0.8-	901112	898	(6.3-	2.8+)
831201	688	2.3+	0.5+	831229	688	0.2+	0.4+	901112	898	2.3-	0.7-
831201	688	2.3-	0.4-	831229	688	0.6-	0.3+				

1984 DF1 = 1982 VN7 = 1990 QV8

Id. T. Furuta (JAM 1695), S. Nakano
 Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
 M 195.21005 (1950.0) P Q
 n 0.22496099 Peri. 169.58026 -0.92963033 -0.36829664
 a 2.6775108 Node 348.78651 +0.33345703 -0.82688300
 e 0.1153297 Incl. 3.55046 +0.15682427 -0.42499657
 P 4.38 H 13.5 G 0.15

Residuals in seconds of arc

821109	095	0.5-	0.5-	840306	809	0.5-	0.3+	840310	809	0.5+	0.3+
821114	095	1.0+	0.7-	840306	809	0.4-	0.1+	840310	809	0.5+	0.2+
840228	809	0.5+	0.7-	840308	809	0.5-	0.0	840311	809	0.2+	0.0
840228	809	0.5+	0.4-	840308	809	0.2-	0.1-	840311	809	0.5+	0.0
840228	809	0.3+	0.1+	840308	809	0.1-	0.1-	840311	809	0.8+	0.0
840301	809	0.5-	0.3+	840308	809	0.5-	1.1-	840311	809	0.9+	0.8-
840301	809	0.2-	0.1-	840308	809	0.4-	1.3-	840311	809	0.9+	0.7-
840301	809	0.2+	0.4-	840308	809	0.5-	1.5-	840311	809	0.6+	0.5-
840303	809	0.9-	0.2+	840309	809	0.1-	0.3+	840314	809	0.7+	0.1-
840303	809	0.6-	0.1+	840309	809	0.0	0.3+	840314	809	0.9+	0.0
840303	809	0.2-	0.0	840309	809	0.5+	0.2+	840314	809	0.9+	0.1-
840304	809	1.6-	0.3+	840309	809	0.6-	0.2-	900816	809	0.2+	0.8-
840304	809	1.5-	0.3+	840309	809	0.5-	0.2-	900816	809	0.2-	1.2-
840304	809	1.2-	0.3+	840309	809	0.4-	0.5-	900816	809	0.0	1.3-
840305	809	0.7-	0.3+	840310	809	0.4+	0.1-	900818	809	1.8+	0.3+
840305	809	0.4-	0.0	840310	809	0.5+	0.0	900818	809	0.7+	0.7-
840305	809	0.4+	0.2-	840310	809	0.5+	0.0	900818	809	0.1-	1.1-
840306	809	1.3-	0.4+	840310	809	0.3+	0.2+				

1984 SA1 = 1973 YP2 = 1990 DY4

Id. H. Kaneda, R. Nagata

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 202.62252

(1950.0)

P

Kaneda

Q

n	0.25646151	Peri.	24.79423	+0.93717493	-0.34875821
a	2.4535105	Node	355.59149	+0.29899869	+0.81542597
e	0.1355714	Incl.	6.28720	+0.17973017	+0.46200455
P	3.84	H	13.2	G	0.15

Residuals in seconds of arc

731220	095	0.2+	1.0+	840929	046	2.2-	0.8-	900301	809	0.1+	1.1-
840920	046	0.6+	1.4-	840929	046	2.8-	0.7+	900301	809	0.3+	1.0-
840921	046	1.8+	0.9+	840930	046	(5.9-	0.1+)	900301	809	0.7+	0.9-
840926	675	0.9+	0.9+	840930	046	(6.6-	0.4-)	900302	809	0.3+	1.1+
840927	675	0.7+	0.4-	900228	809	1.9-	1.3-	900302	809	0.5+	1.3+
840927	046	0.1+	1.6-	900228	809	1.4-	1.3-	900302	809	0.6+	1.4+
840927	046	2.1+	0.6-	900228	809	0.9-	1.2-				

1984 SY5 = 1990 TO8

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

(J-P)

Marsden

M 12.37323

(1950.0)

P

Q

n	0.16850772	Peri.	248.54339	+0.99418833	-0.10108803
a	3.2463129	Node	117.24219	+0.10756472	+0.91869126
e	0.1525605	Incl.	2.38666	+0.00440460	+0.38182139
P	5.85	H	12.5	G	0.15

Residuals in seconds of arc

840921	809	0.3-	0.4+	840926	809	0.7+	1.0-	840929	809	0.3-	0.1+
840921	809	0.1-	0.3+	840927	809	0.1-	0.2+	840929	809	0.2-	0.1+
840921	809	0.5-	0.3+	840927	809	0.1+	0.3+	840930	809	0.7-	0.3+
840922	809	0.4-	0.4+	840927	809	0.3+	0.1+	840930	809	0.3-	0.3+
840922	809	0.0	0.4+	840927	809	0.2+	0.3+	840930	809	0.2-	0.3+
840922	809	0.4+	0.3+	840927	809	0.4+	0.5+	841001	809	0.0	0.0
840923	809	0.0	0.3-	840927	809	0.5+	0.5+	841001	809	0.2+	0.1+
840923	809	0.5+	0.3-	840928	809	0.6-	0.1+	841001	809	0.2+	0.0
840923	809	1.1+	0.4-	840928	809	0.6-	0.2-	901014	046	0.1-	1.2+
840924	809	0.7-	0.3-	840928	809	0.4-	0.1-	901014	046	(4.2+	0.8+)
840924	809	0.8-	0.5-	840928	809	0.4+	0.3+	901015	046	0.1+	1.2-
840924	809	0.5-	0.7-	840928	809	0.5+	0.3+	901015	046	(3.4-	0.7-)
840926	809	0.3+	0.8-	840928	809	0.8+	0.2+				
840926	809	0.6+	0.9-	840929	809	0.4-	0.3-				

1985 FB2 = 1981 DA4 = 1990 QW6

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Marsden
 M 201.03495 (1950.0) P Q
 n 0.26504771 Peri. 10.99974 -0.94180112 -0.32078676
 a 2.4002375 Node 149.68811 +0.29131617 -0.92803111
 e 0.1653284 Incl. 11.48943 +0.16776633 -0.18935184
 P 3.72 H 13.5 G 0.15

Residuals in seconds of arc

810223	095	0.0	0.5-	850423	688	0.3-	1.0-	900823	675	1.0-	2.0+
850322	688	0.3-	0.0	850423	688	0.5+	0.4+	900823	675	1.3-	0.7+
850322	688	0.6-	0.7+	900820	809	1.4+	0.7-	900826	809	0.2+	0.3+
850414	688	0.1+	0.3-	900820	809	1.1+	0.7-	900826	809	0.6-	0.7-
850414	688	0.6+	0.1-	900820	809	0.4+	0.9-	900826	809	0.0	0.7-

1985 RR4 = 1990 UD4

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P) Marsden
 M 50.29951 (1950.0) P Q
 n 0.21245521 Peri. 157.40049 +0.91666337 +0.39965066
 a 2.7815828 Node 179.03008 -0.38706407 +0.88947226
 e 0.1692046 Incl. 9.38685 -0.09954737 +0.22162680
 P 4.64 H 14.0 G 0.15

Residuals in seconds of arc

850823	095	0.4+	0.0	850915	809	0.2-	0.6-	850919	809	0.2+	0.5-
850914	809	0.1-	0.1+	850915	095	2.8-	3.2+	850919	809	0.4+	0.4-
850914	809	0.2-	0.1+	850917	809	0.3+	0.5-	850920	095	1.7+	1.6+
850914	809	0.2-	0.0	850917	809	0.3+	0.6-	901016	809	0.2-	0.1+
850915	809	0.0	0.8-	850917	809	0.2+	0.5-	901020	809	0.3-	0.4-
850915	809	0.1-	0.8-	850919	809	0.2+	0.3-	901020	809	0.5+	0.3+

1985 TB3 = 1972 TH1 = 1990 DB2

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Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
 M 209.48250 (1950.0) P Q
 n 0.30279357 Peri. 188.15148 +0.99738939 -0.07205433
 a 2.1963672 Node 175.97136 +0.06947722 +0.93962304
 e 0.1505689 Incl. 3.87745 +0.01968028 +0.33453956
 P 3.26 H 14.3 G 0.15

Residuals in seconds of arc

721007	095	0.5+	1.7-	900224	809	2.1-	0.1+	900228	809	0.1-	0.2-
850922	095	0.5-	0.6+	900224	809	1.5-	0.2+	900228	809	0.1+	0.1-
851012	026	0.8+	0.3+	900224	809	1.0-	0.4+	900228	809	0.2+	0.0
851013	026	2.0-	0.0	900225	809	0.1+	0.2-	900228	809	0.7+	0.0
851014	026	2.1+	0.0	900225	809	0.6+	0.2-	900228	809	0.8+	0.2+
851016	026	1.1-	1.0+	900225	809	1.3+	0.1-	900228	809	0.8+	0.0

1985 UG2 = 1990 EB8

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
 M 186.02916 (1950.0) P Q
 n 0.30249069 Peri. 251.94394 +0.75027136 -0.66090971
 a 2.1978331 Node 149.41857 +0.61852824 +0.69257536
 e 0.1170528 Incl. 1.92229 +0.23348600 +0.28902894
 P 3.26 H 14.0 G 0.15

Residuals in seconds of arc

850921	095	0.0	0.1-	851020	049	0.7-	0.5+	900304	809	0.1+	0.2-
851017	010(45.6-	9.0-)		851024	049	1.2-	1.1-	900304	809	0.0	0.1-
851018	010(44.9-	11.5-)		851024	049	0.2+	0.2+	900306	809	0.1-	0.4+
851018	095	1.2+	1.1+	851112	095	0.5+	0.6-	900306	809	0.2+	0.2+
851020	049	0.1-	0.1+	900304	809	0.2-	0.3-	900306	809	0.1+	0.2+

1986 PU1 = 1975 TO1 = 1990 TE4

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	30.09874	(1950.0)		P		Williams	Q
n	0.26458525	Peri.	323.45578	+0.98733648		+0.15784483	
a	2.4030287	Node	27.47512	-0.13617828		+0.89458945	
e	0.1984967	Incl.	1.97058	-0.08137662		+0.41808459	
P	3.73	H	15.0	G	0.15		

Residuals in seconds of arc

751003	095	0.3-	0.7+	860830	809	0.2-	0.6-	860906	809	0.1-	0.6+
860801	675	(16.7+	2.7+)	860830	809	0.1+	0.8-	860906	809	0.1-	0.5+
860801	675	(26.9+	4.6+)	860901	809	1.0-	0.0	860906	809	0.1-	0.2+
860802	675	(34.0-	3.6+)	860901	809	1.0-	0.2+	860906	809	0.4+	0.1-
860802	675	(31.3-	4.2+)	860901	809	1.0-	0.4+	860906	809	0.3+	0.0
860804	675	(23.6+	0.4-)	860901	809	0.4-	0.0	860906	809	0.3+	0.0
860804	675	(22.5+	0.1-)	860901	809	0.2-	0.0	860908	809	0.0	0.7-
860826	809	0.1-	0.3+	860901	809	0.1+	0.0	860908	809	0.0	0.6-
860826	809	0.2+	0.2+	860902	809	0.2-	0.1-	860908	809	0.1+	0.5-
860826	809	0.3+	0.3+	860902	809	0.1-	0.0	860908	809	0.1+	0.3+
860827	809	0.6+	0.1+	860902	809	0.2+	0.0	860908	809	0.2+	0.4+
860827	809	1.1+	0.2+	860903	809	0.7-	0.3-	860908	809	0.2+	0.0
860827	809	1.1+	0.1+	860903	809	0.4-	0.3-	901011	033	0.4-	0.4-
860828	809	0.5-	0.6-	860903	809	0.2-	0.3-	901012	033	0.3+	0.1-
860828	809	0.4-	0.5-	860904	809	0.2+	0.6+	901012	033	1.0-	0.5-
860828	809	0.3-	0.6-	860904	809	0.4+	0.8+	901013	033	0.7+	0.3+
860829	809	0.0	0.0	860904	809	0.3+	0.6+	901014	033	0.2-	0.3-
860829	809	0.1+	0.1+	860905	809	0.1+	0.1+	901018	033	0.9+	0.3+
860829	809	0.0	0.1+	860905	809	0.1+	0.0				
860830	809	0.2-	0.6-	860905	809	0.4+	0.2-				

1986 QG1 = 1990 UM3

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

M	207.65701	(1950.0)		P		Marsden	Q
n	0.27867824	Peri.	83.28648	-0.96548683		+0.24961439	
a	2.3213193	Node	111.14769	-0.25914184		-0.89206268	
e	0.0122541	Incl.	4.57237	-0.02609013		-0.37671850	
P	3.54	H	15.0	G	0.15		

Residuals in seconds of arc

860826	809	1.3-	0.9-	860901	809	0.2+	0.6+	860904	809	0.4+	0.5+
860826	809	1.0-	0.8-	860901	809	0.1-	0.3+	860904	809	0.5+	0.4+
860826	809	0.9-	0.7-	860901	809	0.2+	0.3+	860904	809	0.7+	0.2+
860827	809	0.6-	0.6-	860901	809	0.9+	0.4-	860907	809	0.7-	0.3+
860827	809	0.6-	0.9-	860901	809	1.1+	0.4-	860907	809	0.2-	0.1+
860827	809	0.6-	0.6-	860901	809	1.2+	0.6-	860907	809	0.2+	0.1+
860829	809	0.5-	0.2+	860901	809	0.3+	0.9+	901016	809	2.6+	0.5+
860829	809	0.2-	0.2+	860901	809	0.4+	0.8+	901020	809	2.0-	0.7-
860829	809	0.0	0.2+	860901	809	0.5+	0.7+	901020	809	0.5-	0.1+

1986 QT1 = 1990 TS8

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

M	354.93712	(1950.0)		P		Marsden	Q
n	0.26174716	Peri.	20.83891	+0.79032993		-0.61254970	
a	2.4203728	Node	16.95395	+0.55574879		+0.70800447	
e	0.2165857	Incl.	2.49752	+0.25791837		+0.35144351	
P	3.77	H	14.5	G	0.15		

Residuals in seconds of arc

860827	809	1.6-	0.6-	860829	809	0.7-	0.3-	860901	809	0.6+	0.5-
860827	809	1.4-	0.4-	860829	809	0.4-	0.2-	860902	809	0.2-	0.0
860827	809	1.5-	0.5-	860901	809	0.2+	0.3-	860902	809	0.1-	0.1-
860829	809	1.0-	0.3-	860901	809	0.4+	0.4-	860902	809	0.2+	0.1-

860903	809	0.7+	0.2+	860906	809	0.3+	0.2+	860911	809	0.3+	0.2-
860903	809	0.5+	0.3+	860907	809	0.7+	0.6+	860911	809	0.3+	0.1-
860903	809	0.6+	0.2+	860907	809	0.8+	0.4+	860914	809	2.8-	1.3-
860905	809	0.8+	0.7+	860907	809	1.2+	0.5+	860914	809	2.7-	1.5-
860905	809	1.0+	0.9+	860909	809	0.4+	0.5+	901014	046	1.5-	0.0
860905	809	1.1+	0.8+	860909	809	0.4+	0.4+	901014	046	0.4+	0.9-
860906	809	0.3+	0.4+	860909	809	0.4+	0.5+	901015	046	0.0	0.3+
860906	809	0.4+	0.3+	860911	809	0.4+	0.2-	901015	046	1.1+	0.6+

1986 RW = 1979 YU8 = 1990 WL2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	0.86185		(1950.0)		P		Williams
n	0.26017992	Peri.	93.86984	+0.79106018		Q	
a	2.4300779	Node	303.15734	+0.49577277			+0.73627133
e	0.2376430	Incl.	7.57530	+0.35837572			+0.30961402
P	3.79	H	13.5	G	0.15		

Residuals in seconds of arc

791224	095	0.3+	0.7+	860906	675	2.4-	0.3-	861004	688	1.8-	0.1-
860829	095	(4.5-	0.5+)	860906	675	1.6-	0.5+	861004	688	0.1-	0.7+
860901	675	0.5-	0.0	860906	095	0.8+	1.0-	901118	675	0.0	0.1+
860901	675	1.6+	0.1+	860911	688	0.3-	0.1+	901118	675	0.7+	0.6-
860902	675	2.2+	0.1+	860911	688	0.4+	0.2-	901119	675	0.3+	0.5-
860905	688	1.1+	0.2-	860929	095	0.4-	1.6+	901119	675	0.6-	0.2-
860905	688	0.4+	0.2-	861002	095	(4.0-	1.8+)				

1986 TG1 = 1990 SM1

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Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	20.38330		(1950.0)		P		Kaneda
n	0.23993484	Peri.	356.89318	+0.99675474		Q	
a	2.5649201	Node	358.45459	-0.06717410			+0.78108137
e	0.1251184	Incl.	14.93548	-0.04435807			+0.61925779
P	4.11	H	13.3	G	0.15		

Residuals in seconds of arc

861003	095	(13.6-	8.7+)	861011	095	1.5+	1.1-	900917	675	0.1-	0.1-
861004	688	0.3+	1.1-	900916	675	0.3+	0.0	900918	675	0.2+	1.1+
861004	688	1.2+	1.1-	900916	675	0.3+	0.2-	900918	675	0.7-	1.1-
861007	095	3.0-	3.4+	900917	675	0.0	0.2+				

1986 TT11 = 1990 TZ8

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	32.03882		(1950.0)		P		Nakano
n	0.23977056	Peri.	328.87856	+0.89062503		Q	
a	2.5660916	Node	4.21436	-0.35178238			+0.71310786
e	0.1901744	Incl.	13.92722	-0.28816003			+0.53385671
P	4.11	H	13.5	G	0.15		

Residuals in seconds of arc

861003	095	0.4-	1.4+	900921	372	0.5+	0.1-	901017	400	0.5+	0.4+
861007	095	0.3+	1.3-	901010	400	0.6-	0.0	901017	400	0.1-	0.3-
861011	095	(4.6+	7.8-)	901010	400	1.2+	0.9+				
900921	372	0.9-	0.2-	901010	400	0.6-	0.9-				

1986 XT = 1990 TL3

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	16.91854		(1950.0)		P		Kaneda
n	0.24029008	Peri.	17.52867	+0.97786049		Q	
a	2.5623916	Node	354.53715	+0.18441512			+0.87386207
e	0.2926104	Incl.	3.30304	+0.09889353			+0.43886934
P	4.10	H	14.2	G	0.15		

Residuals in seconds of arc

861125	046	1.4-	0.9-	901015	400	0.6+	1.8-	901021	400	1.5+	1.8+
861125	046	0.0	0.0	901015	400	0.6+	1.1-	901021	400	0.6+	0.3+
861129	046	0.4+	0.2-	901017	372	2.4-	1.2-	901023	372	0.7+	1.2-
861129	046	0.9+	0.3+	901017	372	1.3-	2.1+	901023	372	0.4-	0.6-
861202	688	(3.3-	4.4+)	901020	402	0.6+	0.8+	901026	372	(4.6-	0.4+)
861202	688	0.1+	0.6+	901020	402	1.5+	0.9+	901026	372	0.2-	0.3+
861204	046	(5.6+	3.1+)	901020	372	0.3+	0.1-	901027	372	1.4-	0.2-
861204	046	(8.2+	2.1+)	901020	372	0.0	0.0	901027	372	0.8-	0.1+

1987 DJ = 1985 YN1

Id. S. Nakano (MPC 12001)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nakano

M	35.72727		(1950.0)			P		Q		
n	0.18756440	Peri.	278.52650			+0.98209472		-0.02222461		
a	3.0225194	Node	82.89817			+0.09900020		+0.90573061		
e	0.1167661	Incl.	10.86634			-0.16027765		+0.42327075		
P	5.25	H	11.8			G	0.15			

Residuals in seconds of arc

851217	010	1.5-	0.6-	870222	054	0.9+	0.6+	901020	402	0.2-	0.5-
851217	010	2.9+	0.4+	870224	054	2.2+	0.8-	901020	402	1.5+	0.7+
851219	010	0.6-	2.0-	870226	054	1.9-	0.0	901021	402	0.9-	0.3-
870219	054	0.0	0.5-	870302	054	0.7-	1.9+	901021	402	0.4-	0.2-
870220	054	0.0	0.8+	880419	801	1.3-	2.8-				

1987 DP6 = 1990 UR3

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

Marsden

M	302.51718		(1950.0)			P		Q		
n	0.19176714	Peri.	327.03650			-0.35593462		-0.93236633		
a	2.9782018	Node	143.70116			+0.87883185		-0.35698145		
e	0.1036168	Incl.	6.13560			+0.31775010		-0.05707248		
P	5.14	H	13.0			G	0.15			

Residuals in seconds of arc

870223	809	0.1+	0.9-	870301	809	0.7+	0.2+	870305	809	0.2-	0.6-
870223	809	0.1+	0.8-	870302	809	0.6-	0.7+	870305	809	0.1-	0.7-
870223	809	0.3+	0.8-	870302	809	0.5-	0.7+	870306	809	0.1-	0.3+
870226	809	0.4+	0.4-	870302	809	0.4-	0.5+	870306	809	0.1+	0.6+
870226	809	0.6+	0.4-	870303	809	0.6-	0.8+	870306	809	0.5+	0.6+
870226	809	0.6+	0.5-	870303	809	0.7-	0.7+	870310	809	0.7+	1.3-
870227	809	0.5-	0.2+	870303	809	0.6-	0.6+	870310	809	0.8+	1.2-
870227	809	0.4-	0.2+	870304	809	0.7-	0.9+	870310	809	0.9+	0.9-
870227	809	0.3-	0.6+	870304	809	0.6-	0.9+	901016	809	0.5+	0.5+
870301	809	0.6+	0.3-	870304	809	0.6-	0.9+	901020	809	0.3+	0.0
870301	809	0.6+	0.1-	870305	809	0.2-	0.5-	901020	809	0.8-	0.6-

1987 EH = 1969 VY1 = 1977 FM1 = 1990 UX

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nakano

M	299.04771		(1950.0)			P		Q		
n	0.18754374	Peri.	297.49699			-0.29236442		-0.95572965		
a	3.0227415	Node	169.34273			+0.92849091		-0.29200761		
e	0.0577411	Incl.	10.34982			+0.22897090		-0.03622702		
P	5.26	H	12.1			G	0.15			

Residuals in seconds of arc

691115	095	0.6+	3.2-	870224	809	0.1+	0.4-	870226	809	0.3-	0.2-
770326	095	0.0	0.0	870224	809	0.2+	0.4-	870226	809	0.3-	0.2+
870223	809	0.6-	0.4-	870225	809	0.7-	0.5-	870227	809	0.1-	0.4-
870223	809	0.2-	0.3-	870225	809	0.5-	0.5-	870227	809	0.3-	0.9-
870223	809	0.1-	0.2-	870225	809	0.3-	0.4-	870227	809	0.5-	0.8-
870224	809	0.0	0.4-	870226	809	0.2-	0.1-	870228	809	0.0	1.1+

870228	809	0.2+	1.1+	870304	809	0.4+	0.2-	870310	809	1.1-	0.3+
870228	809	0.2+	0.7+	870304	809	0.6+	0.1-	870310	809	1.0-	0.5+
870301	809	0.1+	0.2-	870304	809	0.6+	0.1+	870311	809	0.8-	0.6+
870301	809	0.2+	0.1+	870305	809	0.4+	0.1-	870311	809	0.7-	0.5+
870301	809	0.1+	0.1+	870305	809	0.4+	0.2-	870311	809	0.7-	0.6+
870302	809	0.4-	0.2-	870305	809	0.5+	0.1-	901019	402	2.0+	1.6+
870302	809	0.2+	0.1+	870306	809	0.3+	0.3+	901019	402	(1.5+	4.9+)
870302	809	0.6+	0.3+	870306	809	0.3+	0.3+	901020	402	0.1-	1.9+
870303	809	0.3+	0.4-	870306	809	0.5+	0.4+	901020	402	(3.3+	2.1+)
870303	809	0.7+	0.6-	870307	809	0.3+	0.4+	901021	402	1.2-	0.4+
870303	809	0.8+	0.6-	870307	809	0.2+	0.4+	901021	402	1.5-	0.2-
870303	688	1.0+	0.3-	870307	809	0.4+	0.7+				
870303	688	0.4+	0.9+	870310	809	1.1-	0.3+				

1987 RA1 = 1990 DV2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 275.51571		(1950.0)		P		Nagata	
n 0.19939398	Peri.	19.75564		+0.32408084		Q	
a 2.9017591	Node	269.15697		-0.87009653			+0.94588940
e 0.0391895	Incl.	0.93257		-0.37135378			+0.29127183
P 4.94	H 12.1		G 0.15				+0.14301733

Residuals in seconds of arc

870913	809	1.6-	1.3+	870916	809	1.6+	0.5+	900224	809	1.0+	0.7-
870913	809	1.1-	0.4+	870916	809	1.5+	0.4+	900226	809	0.3-	0.5+
870913	809	2.7-	2.1-	870918	809	0.3+	0.4+	900226	809	0.2-	0.5+
870914	809	0.4-	0.6-	870918	809	0.4+	0.4+	900226	809	0.1-	0.2+
870914	809	0.3-	0.6-	870918	809	0.5+	0.3+	900301	809	0.5-	0.1+
870914	809	0.1-	0.6-	900224	809	0.3+	0.6-	900301	809	0.5-	0.4+
870916	809	1.6+	0.3+	900224	809	0.7+	0.7-	900301	809	0.3-	0.4+

1988 CX3 = 1979 XW = 1990 TT9

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 302.87748		(1950.0)		P		Nakano	
n 0.25787090	Peri.	210.71621		-0.07217286		Q	
a 2.4445626	Node	243.54337		+0.93340815			-0.99369939
e 0.0917811	Incl.	5.49609		+0.35148302			-0.03699629
P 3.82	H 13.6		G 0.15				-0.10579598

Residuals in seconds of arc

791214	095	0.0	0.2+	880221	809	0.1+	0.7+	900926	372	(12.3+	5.8-)
880213	809	0.9+	2.5+	880221	809	0.3-	0.6+	900926	372	(9.2+	6.3-)
880215	809	0.6-	1.2+	880221	809	0.1-	0.8+	901010	033	0.5+	0.2-
880216	809	1.4+	2.6-	880223	809	1.6-	0.6+	901011	033	0.1-	0.2+
880216	809	1.8+	2.5-	880223	809	1.5-	0.6+	901011	033	0.3-	0.2-
880216	809	1.2+	2.7-	880223	809	1.3-	0.6+				

1988 CN4 = 1976 GK5 = 1990 TX6

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 266.56627		(1950.0)		P		Williams	
n 0.24146252	Peri.	253.60772		-0.37830169		Q	
a 2.5540902	Node	218.78911		+0.88138841			-0.92376769
e 0.1674278	Incl.	5.45075		+0.28291749			-0.33980753
P 4.08	H 13.5		G 0.15				-0.17659020

Residuals in seconds of arc

760402	095	0.1-	0.4-	880216	809	0.5+	1.4-	880223	809	2.5-	0.8+
880213	809	1.0+	0.1+	880221	809	1.0+	0.5+	880223	809	2.0-	0.9+
880215	809	0.4+	0.6-	880221	809	0.9+	0.6+	901009	413	0.4-	0.5-
880216	809	0.3+	1.2-	880221	809	1.2+	0.5+	901011	413	0.6+	0.0
880216	809	1.2+	1.3-	880223	809	1.9-	1.0+				

1988 DJ1 = 1990 QY1 = 1990 RK

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 322.35247

(1950.0)

P

Kaneda

Q

n	0.25465983	Peri.	269.56594	+0.51436894	-0.85624573
a	2.4650691	Node	149.32982	+0.81923432	+0.47420019
e	0.1892716	Incl.	5.35686	+0.25353446	+0.20488392
P	3.87	H	13.6	G	0.15

Residuals in seconds of arc

880219	888	0.8-	0.8+	880309	888	0.4-	1.9-	900822	675	0.4+	1.5+
880219	888	0.5+	0.7-	880309	888	1.5+	0.9-	900822	675	0.1-	1.1+
880307	888	0.5+	2.0+	880310	888	0.7-	0.0	900914	675	0.1+	0.0
880307	888	1.9+	1.2-	880310	888	0.8-	0.5+	900914	675	0.1-	0.4+
880307	888	2.5+	0.5-	900820	809	0.3+	0.4-	900919	675	0.1+	0.7-
880308	888	1.6-	1.0+	900820	809	0.3-	1.2-	900919	675	0.3-	0.1+
880308	888	2.6-	0.7+	900820	809	0.1+	0.9-				

1988 QD1 = 1951 LO

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

M 177.50618

(1950.0)

P

Williams

Q

n	0.21409664	Peri.	69.20211	+0.71448907	+0.65137763
a	2.7673474	Node	249.19199	-0.69920449	+0.65180201
e	0.3720620	Incl.	15.85393	-0.02486892	+0.38840872
P	4.60	H	13.0	G	0.15

Residuals in seconds of arc

510607	711	0.8-	0.5-	Y	880818	675	0.0	0.2-	880913	675	0.1+	0.0
510608	711	0.8+	0.5+	Y	880910	675	0.3-	0.4+				
880818	675	0.0	0.1+		880912	675	0.1+	0.3-				

1988 RV

Id. C. S. Shoemaker (1989 obs.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 283.35391

(1950.0)

P

Williams

Q

n	0.08275327	Peri.	126.99664	-0.49311661	-0.86928707
a	5.2152997	Node	352.31408	+0.69422769	-0.36944338
e	0.0429453	Incl.	14.85709	+0.52429374	-0.32840764
P	11.91	H	10.0	G	0.15

Residuals in seconds of arc

880816	675	0.1-	1.0+	880913	675	1.5-	0.4+	890924	675	0.6-	0.1+
880816	675	0.8+	0.2+	881008	675	0.8+	1.1-	891102	675	0.6+	0.1+
880911	675	0.1-	0.4-	881008	675	0.1+	0.3-				

1988 RK1 = 1989 UN9

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 78.77322

(1950.0)

P

Williams

Q

n	0.08163024	Peri.	282.41187	+0.94878051	+0.28199643
a	5.2630236	Node	61.35807	-0.18764955	+0.86573967
e	0.0918838	Incl.	9.34146	-0.25417158	+0.41348863
P	12.07	H	10.0	G	0.15

Residuals in seconds of arc

880910	675	(0.4-	4.8+)	881105	675	0.6-	0.0	891103	675	0.3-	1.2+
880914	675	0.6-	0.4-	881107	675	0.0	1.1-	891122	675	0.9+	0.4-
880916	675	0.3+	1.2+	891026	372	(4.7-	1.7+)	891122	675	0.5+	0.4-
881007	675	0.5+	0.3-	891026	372	(6.4-	2.4+)				
881009	675	0.4+	0.5+	891103	675	1.1-	0.3-				

1988 RL9 = 1988 PO4 = 1990 DC1 = 1990 EW5

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 184.41915	(1950.0)		P		Nakano	Q
n 0.29922981	Peri. 62.96130	+0.86009879			-0.50786774	
a 2.2137716	Node 327.49578	+0.43065987			+0.77329113	
e 0.1068016	Incl. 5.12081	+0.27342666			+0.37959345	
P 3.29	H 13.6	G 0.15				

Residuals in seconds of arc

880808 095	0.8- 0.1+	880910 809	0.7+ 0.7-	900301 809	0.1- 1.3-
880808 095	0.8+ 0.9-	880910 809	0.6+ 0.5-	900302 809	0.1+ 0.4-
880901 809	(1.3+ 10.9+)	880914 809	(15.3+ 10.0+)	900302 809	0.2+ 0.4-
880902 809	(1.4+ 11.0+)	880914 809	(14.8+ 9.9+)	900302 809	0.2+ 0.5-
880902 809	(1.4+ 11.0+)	880914 809	(15.2+ 9.5+)	900303 809	0.3- 0.0
880905 809	0.7- 2.2+	900221 220	(1.9+ 5.9-)	900303 809	0.3- 0.0
880905 809	0.5- 2.0+	900221 220	(2.7+ 5.4-)	900303 809	0.0 0.2+
880905 809	0.3- 1.9+	900228 399	0.9+ 1.0-	900304 809	0.1- 1.5+
880907 809	0.1- 1.4-	900228 399	(3.4- 0.8+)	900304 809	0.1+ 1.5+
880908 809	0.1- 1.4-	900228 399	(2.4- 0.9-)	900304 809	0.2+ 1.5+
880908 809	0.1+ 1.4-	900301 809	0.8- 0.8-		
880909 809	0.7+ 0.7-	900301 809	0.5- 1.1-		

1988 TZ1

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

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 107.28354	(1950.0)		P		Williams	Q
n 0.08112855	Peri. 22.54007	+0.70738921			+0.59464661	
a 5.2846988	Node 295.17645	-0.69563309			+0.48988518	
e 0.1101011	Incl. 24.97372	-0.12528014			+0.63750131	
P 12.15	H 10.0	G 0.15				

Residuals in seconds of arc

880914 675	0.1- 0.0	881013 675	0.4- 0.8+	901111 675	0.6+ 0.1-
880914 675	0.3- 0.6+	881104 675	0.9+ 1.4-	901113 675	0.5- 0.3+
881013 675	0.3- 0.2+	881106 675	0.4+ 0.2-		

1988 VV3 = 1975 VC10 = 1977 DY1 = 1979 RT = 1990 EJ6

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 222.57349	(1950.0)		P		Kaneda	Q
n 0.22914881	Peri. 310.73056	+0.97817832			+0.20650670	
a 2.6447887	Node 37.36817	-0.17745586			+0.88760427	
e 0.0971737	Incl. 2.15767	-0.10805828			+0.41172034	
P 4.30	H 13.0	G 0.15				

Residuals in seconds of arc

751106 095	1.2- 0.2+	881117 399	(3.4+ 0.5+)	900302 809	0.1+ 0.7-
770218 381	0.3+ 0.2+	881117 399	0.7- 0.6-	900303 809	0.3- 0.5+
770218 381	0.8+ 0.3-	881117 399	0.1+ 0.9-	900303 809	0.1+ 0.7+
770219 381	0.3- 0.8+	881202 399	0.9- 0.8+	900303 809	0.3+ 0.9+
770219 381	0.8+ 0.2+	881202 399	0.9- 1.5-	900304 809	0.5- 0.2-
790902 095	0.1+ 0.5+	881202 399	1.5+ 1.6+	900304 809	0.4- 0.4-
881114 399	0.8+ 0.5-	881202 399	0.7- 1.1+	900304 809	0.2- 0.3-
881114 399	0.3+ 0.2+	900302 809	0.4- 0.4-		
881114 399	1.3+ 0.8-	900302 809	0.2- 0.5-		

1989 FH = 1990 SJ6

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

M 156.21359	(1950.0)		P		Williams	Q
n 0.29239849	Peri. 132.34455	-0.82540822			+0.56256338	
a 2.2481235	Node 81.94117	-0.53092455			-0.74515928	
e 0.0991524	Incl. 2.72984	-0.19188641			-0.35813419	
P 3.37	H 14.0	G 0.15				

Residuals in seconds of arc

890330	400	1.7-	0.1+	890412	400	2.1-	1.2-	900922	809	0.1-	1.0-
890330	400	0.8+	1.5-	890412	400	2.2+	1.4+	900922	809	1.2+	0.9+
890330	400	0.3+	1.0+	890428	400	0.5-	0.1+	900925	809	0.7-	0.9+
890406	400	1.8+	0.9+	890428	400	0.4+	0.9+	900925	809	0.4+	0.3+
890406	400	0.0	0.2-	890428	400	0.3-	1.1-	900925	809	0.1+	0.1-
890406	400	0.9-	0.3-	900922	809	0.9-	1.0-				

1989 FL = 1990 QC9

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P)				Marsden			
M	123.45690		(1950.0)	P		Q	
n	0.21581321	Peri.	228.32185		-0.83262669		+0.55236814
a	2.7526536	Node	345.06319		-0.45026129		-0.71746932
e	0.1644857	Incl.	8.98998		-0.32248654		-0.42441397
P	4.57	H	13.5	G	0.15		

Residuals in seconds of arc

890329	372	0.0	2.0-	890406	474	0.6-	1.3+	900816	809	0.5+	0.1-
890329	372	0.3+	0.3-	890406	474	1.0-	1.6+	900816	809	1.0+	0.3-
890404	372	0.6+	0.4-	890411	372	0.4+	1.3-	900818	809	0.4-	0.3-
890404	372	1.3+	0.1+	890411	372	0.2-	1.1-	900818	809	0.9-	0.2+
890405	474	0.4-	1.5+	890412	474	0.6+	0.9-	900818	809	1.2-	0.3+
890405	474	0.9-	1.5+	900816	809	1.0+	0.1+				

1989 GR3 = 1952 JA = 1990 TO2

Id. H. Kaneda, R. W. Sinnott, R. Nagata				Kaneda			
Epoch 1990 Nov. 5.0 ET = JDE 2448200.5							
M	86.34619		(1950.0)	P		Q	
n	0.23913230	Peri.	14.23483		+0.01159181		+0.99775983
a	2.5706555	Node	256.46084		-0.92387829		-0.01451859
e	0.2480487	Incl.	3.88587		-0.38251083		+0.06530337
P	4.12	H	13.9	G	0.15		

Residuals in seconds of arc

520501	839	0.4+	1.1-	890404	809	2.9+	0.2+	901011	033	0.0	0.1+
520501	839	0.7+	0.6+	890408	809	1.6-	1.3+	901012	033	0.4-	0.7-
890401	809	0.1+	1.2-	890408	809	1.3-	0.6+	901013	033	0.3+	0.7+
890401	809	0.0	0.8-	890408	809	1.8-	0.0	901014	033	0.2-	0.2+
890401	809	0.1-	0.5-	901010	033	0.4+	0.6+				
890404	809	1.9+	0.5+	901011	033	0.3+	0.9-				

1989 GU3 = 1969 AB1 = 1990 TY4

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5				Williams			
M	69.78833		(1950.0)	P		Q	
n	0.25356945	Peri.	20.40349		+0.17822201		+0.98145079
a	2.4721307	Node	259.91425		-0.91241101		+0.13794763
e	0.0969826	Incl.	4.11496		-0.36843326		+0.13313455
P	3.89	H	13.5	G	0.15		

Residuals in seconds of arc

690115	095	0.0	0.1-	890410	809	0.1+	0.1-	901009	413	0.3+	0.5-
890404	809	0.9+	0.8+	890410	809	1.4+	0.1-	901009	413	0.5-	0.5+
890404	809	0.0	0.8+	890411	809	0.4-	1.0-	901011	413	0.3+	0.0
890410	809	1.3-	0.4-	890411	809	0.7-	0.0				

1989 JK = 1983 YA = 1990 QJ7

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 (J-P)				Marsden			
M	153.64243		(1950.0)	P		Q	
n	0.23747417	Peri.	35.85013		-0.95657749		+0.28112560
a	2.5826130	Node	160.05181		-0.29092853		-0.93707640
e	0.1708991	Incl.	13.04245		+0.01789140		-0.20701744
P	4.15	H	13.0	G	0.15		

Residuals in seconds of arc

831229	567	1.4-	3.3+	890531	675	0.4+	1.1+	890606	675	1.5+	1.5-
831229	567	1.4+	3.7-	890601	675	0.6+	0.3-	890606	675	(2.3+	0.2-)
890502	675	0.9+	0.1+	890601	675	1.2-	1.2+	900820	809	0.6+	0.5+
890502	675	0.4+	0.2+	890601	675	(0.3-	5.5-)	900820	809	0.3-	0.1+
890504	675	0.8-	0.0	890601	675	(1.0-	3.6-)	900820	809	0.1+	0.8+
890504	675	1.6-	0.9-	890602	675	1.3-	0.5+	900826	809	0.4-	0.4-
890529	675	0.1-	0.4-	890602	675	(6.7-	1.7+)	900826	809	0.2+	0.4-
890529	675	(3.0-	0.2+)	890602	675	(1.9-	7.4-)	900826	809	0.1-	1.0-
890530	675	(2.4-	2.6-)	890604	675	0.1+	0.4-				
890530	675	(0.1-	3.2+)	890604	675	1.2+	0.1-				

1989 TY10 = 1989 UJ8 = 1965 UH1

Id. S. Nakano (d), H. Kaneda

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	113.52851		(1950.0)			P		Kaneda		Q	
n	0.28783264	Peri.	180.63405			+0.95177555				-0.30574030	
a	2.2718310	Node	197.23441			+0.28184169				+0.90408697	
e	0.2232193	Incl.	4.92184			+0.12119642				+0.29857934	
P	3.42	H	14.8			G	0.15				

Residuals in seconds of arc

651018	330	0.4+	0.3-	891009	400	0.0	2.8+	891011	809	0.7-	1.3-
651021	330	0.4-	0.2+	891011	809	0.8+	0.8+	891021	095	0.1+	0.9-
891009	400	0.2+	1.8-	891011	809	0.3+	0.1+	891025	095	0.1-	0.7+
891009	400	0.5-	0.3+	891011	809	0.3-	0.7-				

1990 DD2 = 1976 GC2 = 1983 HP1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	6.93890		(1950.0)			P		Kaneda		Q	
n	0.27599654	Peri.	48.81785			-0.65697643				+0.75391111	
a	2.3363270	Node	180.11264			-0.70703187				-0.61617429	
e	0.1557211	Incl.	3.13956			-0.26170193				-0.22791947	
P	3.57	H	14.6			G	0.15				

Residuals in seconds of arc

760401	095	0.2-	0.2+	900224	809	0.8-	0.2-	900228	809	0.2+	0.4+
760404	095	0.3+	0.2-	900224	809	0.2-	0.4-	900228	809	0.2+	0.7+
830416	033	0.1-	0.0	900225	809	0.1-	0.4-	900228	809	0.6+	0.8+
830416	033	0.0	0.2-	900225	809	0.5+	0.3-				
900224	809	1.3-	0.1-	900225	809	0.9+	0.4-				

1990 DK3 = 1990 DC = 1979 GF

Id. S. Nakano, R. Nagata

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	45.07673		(1950.0)			P		Nakano		Q	
n	0.26445563	Peri.	19.18759			-0.99810984				+0.06036816	
a	2.4038139	Node	164.26012			-0.06045879				-0.93096763	
e	0.1476297	Incl.	2.43144			-0.01102232				-0.36007633	
P	3.73	H	14.5			G	0.15				

Residuals in seconds of arc

790331	095	0.0	0.9-	900218	399	0.7-	0.9+	900225	809	0.4+	0.5-
790401	809	0.1+	0.6+	900218	399	0.2-	0.8-	900225	809	1.0+	0.7-
790402	809	0.1-	0.3+	900218	399	0.5-	1.7+	900225	809	1.6+	0.9-
900216	399	1.1-	0.4-	900224	809	0.9-	0.2+	900227	809	0.9-	0.5+
900216	399	1.9+	2.0-	900224	809	0.4-	0.2+	900227	809	0.5-	0.6+
900216	399	0.1+	0.3+	900224	809	0.3+	0.3+	900227	809	0.2-	0.7+

1990 DM3 = 1977 LM

Id. H. Kaneda, R. Nagata

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Kaneda

M	324.02367		(1950.0)			P		Q	
n	0.29381391	Peri.	288.21642			+0.26848292		+0.96327720	
a	2.2408931	Node	357.34905			-0.85042214		+0.23520327	
e	0.1555754	Incl.	4.63242			-0.45243686		+0.12952393	
P	3.35	H	13.6		G	0.15			

Residuals in seconds of arc

770608	808	0.9+	0.3-	900225	809	0.4-	0.3+	900316	809	0.8+	0.3-
770608	808	0.2+	1.2+	900225	809	0.1-	0.4+	900316	809	0.8+	0.3-
770611	808	0.7-	1.0-	900225	809	0.3+	0.4+	900316	809	1.1+	0.2-
770611	808	0.4-	0.1+	900226	809	0.6-	0.9-	900317	809	1.2-	0.3+
900224	809	0.3+	0.5+	900226	809	0.2-	0.5-	900317	809	1.0-	0.2+
900224	809	0.6+	0.5+	900226	809	0.4+	0.5-	900317	809	0.9-	0.2+

1990 MB

Id. B. Roman (1979 obs.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Williams

M	3.58873		(1950.0)			P		Q	
n	0.52410566	Peri.	95.27319			+0.88238303		+0.35153641	
a	1.5235504	Node	244.45983			-0.43071209		+0.87105894	
e	0.0648124	Incl.	20.28182			+0.18943939		+0.34304296	
P	1.88	H	16.0		G	0.15			

Residuals in seconds of arc

791121	675	0.6-	0.8-	900714	675	0.5+	0.3+	900816	801	0.3-	0.1+
791121	675	0.5-	0.9+	900714	675	0.4+	0.2+	900816	801	0.8-	1.0-
791124	675	0.3+	1.3-	900714	675	0.5+	0.3+	900817	801	0.9-	0.3+
791124	675	0.8+	1.3+	900719	801	0.5+	0.3+	900817	801	0.9-	0.6+
900620	675	0.1-	0.3+	900719	801	0.3+	0.2+	900822	568	(0.4-	5.0+)
900620	675	0.0	0.3+	900720	801	0.3+	0.4+	900827	688	0.3-	0.6+
900622	675	0.0	0.8-	900720	801	0.3+	0.3+	900827	688	0.2-	0.6+
900622	675	0.4+	0.7-	900724	675	0.2-	0.2+	900922	688	0.1-	0.5-
900623	675	0.7-	0.2-	900724	675	0.4-	0.3-	900922	688	0.1+	1.3-
900623	675	0.2-	0.4-	900726	675	0.4+	0.8-	900923	568	1.9-	0.0
900626	675	0.2-	0.2+	900726	675	0.3-	0.1-	900925	688	0.8+	0.1-
900626	675	1.2-	1.2-	900729	688	0.5+	0.4+	900925	688	0.2-	0.1-
900629	413	(2.6+	0.2-)	900729	688	0.7+	0.6+	901014	568	0.8+	0.6-
900629	413	0.4-	0.6+	900730	688	0.8+	0.2+				
900714	675	0.5+	0.3+	900730	688	1.0+	0.4+				

1990 OB = 1952 UN1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.

Bardwell

M	329.39697		(1950.0)			P		Q	
n	0.20532667	Peri.	191.55862			+0.86980586		-0.48438583	
a	2.8455909	Node	198.33691			+0.47310683		+0.87279783	
e	0.2764640	Incl.	17.35654			+0.14002750		+0.05995261	
P	4.80	H	11.5		G	0.15			

Residuals in seconds of arc

521017	024	0.0	0.6+	900816	675	0.5+	1.0-	901016	801	0.4+	0.2-
900719	675	0.0	1.3+	900816	675	0.9+	0.0	901017	801	0.0	0.5-
900719	675	1.0-	0.6+	900819	675	0.4+	0.1+	901017	801	1.3-	0.3+
900722	675	0.7-	0.4+	900819	675	0.2+	0.2-	901022	801	0.5-	0.9-
900722	675	0.2+	0.2-	901016	801	0.9+	0.6+	901022	801	0.3-	0.9-

1990 OE = 1974 VX = 1982 UM5

Epoch 1990 Nov. 5.0 ET = JDE 2448200.

M	344.43393	(1950.0)		P		Bardwell	Q
n	0.23874805	Peri.	137.11679	+0.98271009			-0.08405438
a	2.5734130	Node	228.48059	+0.03999685			+0.96634871
e	0.1792268	Incl.	12.72873	+0.18077922			+0.24311526
P	4.13	H	12.5	G	0.15		

Residuals in seconds of arc

741112	095	0.0	0.5+	900722	675	0.2+	1.3-	901016	801	0.5-	0.2-
821020	095	(1.5-	26.3+)	900816	675	0.9-	0.1+	901016	801	0.4-	0.4-
900719	675	1.4-	0.2+	900816	675	0.9+	0.3+	901016	801	0.0	0.4-
900719	675	0.8-	0.7+	900819	675	1.2+	0.9+	901016	801	0.0	0.6-
900722	675	0.3+	0.1-	900819	675	1.0+	0.1+				

1990 OH

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	3.42672	(1950.0)		P		Bowell	Q
n	0.22759251	Peri.	131.97719	+0.96870495			+0.20718992
a	2.6568318	Node	216.68512	-0.23352717			+0.94736737
e	0.3047919	Incl.	13.22614	+0.08411766			+0.24406433
P	4.33	H	13.3	G	0.15		

From 9 observations 1990 July 22-Oct. 23, mean residual 0".69.

1990 OAl

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	67.37030	(1950.0)		P		Bowell	Q
n	0.23922994	Peri.	4.74272	-0.02535971			+0.96690404
a	2.5699560	Node	263.96027	-0.92533594			-0.11880743
e	0.1056795	Incl.	14.79100	-0.37829920			+0.22579054
P	4.12	H	11.7	G	0.15		

From 10 observations 1990 July 22-Oct. 23, mean residual 0".62.

1990 OF1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	18.19082	(1950.0)		P		Bardwell	Q
n	0.17995625	Peri.	140.06051	+0.50397847			+0.85943577
a	3.1071205	Node	159.74330	-0.84218122			+0.51104290
e	0.1994631	Incl.	14.36237	-0.19166765			+0.01432893
P	5.48	H	11.5	G	0.15		

From 16 observations 1990 July 18-Oct. 20, mean residual 0".6.

1990 OK1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	13.90258	(1950.0)		P		Bardwell	Q
n	0.28002045	Peri.	38.60652	+0.93426226			+0.14641103
a	2.3138909	Node	309.69665	-0.32515451			+0.72410385
e	0.3315223	Incl.	24.99710	+0.14638504			+0.67397138
P	3.52	H	13.5	G	0.15		

From 11 observations 1990 July 27-Oct. 16, mean residual 0".5.

1990 OB4

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	0.95098	(1950.0)		P		Bowell	Q
n	0.22881664	Peri.	83.84157	+0.97660206			+0.08182158
a	2.6473477	Node	271.34191	-0.15615565			+0.90565978
e	0.2471868	Incl.	11.47472	+0.14786420			+0.41603557
P	4.31	H	13.6	G	0.15		

From 8 observations 1990 July 26-Oct. 23, mean residual 0".62.

1990 PA = 1983 EB3

Id. G. V. Williams (MPC 17212)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Williams

M	21.83646		(1950.0)		P		Q
n	0.22055480	Peri.	278.64388	+0.97260144			-0.10405496
a	2.7130536	Node	87.51822	+0.18119247			+0.89956218
e	0.2234230	Incl.	12.01027	-0.14565618			+0.42421745
P	4.47	H	11.5	G	0.15		

Residuals in seconds of arc

790324	413	0.2+	0.2+	900813	413	0.5+	0.1+	901015	413	0.3+	0.2+
830314	095	0.2-	0.2-	900818	413	0.7+	0.7+	901108	413	0.3-	0.2+
880124	413	0.1-	0.1-	900828	413	1.2-	1.0-	901109	413	0.0	0.2+
900812	413	0.7-	0.2+	900916	413	0.6+	0.7-				

1990 QQ1 = 1979 SE2

Id. R. Nagata

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Williams

M	308.05037		(1950.0)		P		Q
n	0.17648918	Peri.	94.44055	+0.24621536			-0.96515694
a	3.1476806	Node	340.59550	+0.74929302			+0.24753408
e	0.2276138	Incl.	15.46683	+0.61476659			+0.08484668
P	5.58	H	12.5	G	0.15		

Residuals in seconds of arc

790922	095	0.7-	0.7+	900828	675	0.4+	0.5+	901009	413	0.9-	0.3+
790928	095	0.7+	0.7-	900914	675	0.8+	1.2-	901009	413	0.1-	2.2+
900822	675	1.0+	2.1+	900914	675	0.0	0.2-	901011	413	0.4+	1.5+
900822	675	0.1+	1.1+	900919	675	0.4+	2.4-				
900828	675	1.9-	0.5-	900919	675	0.4-	3.1-				

1990 QA2 = 1976 JR6 = 1981 NE1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nagata

M	293.64180		(1950.0)		P		Q
n	0.23092687	Peri.	114.85017	+0.26395229			-0.96436980
a	2.6311952	Node	319.83174	+0.87458559			+0.24711721
e	0.0609187	Incl.	1.58936	+0.40672993			+0.09446679
P	4.27	H	13.6	G	0.15		

Residuals in seconds of arc

760503	809	0.1-	0.1-	900827	372	(0.8-	3.6+)	900914	675	0.3+	0.5+
810702	805	(1.7+	5.0-)	900827	372	(1.7-	3.2+)	900919	675	0.0	0.4-
810702	805	0.1-	0.1+	900828	675	0.1+	0.8-	900919	675	0.1-	1.0-
900822	675	0.2-	0.0	900828	675	0.0	0.7+				
900822	675	0.3-	0.2-	900914	675	0.1-	1.0+				

1990 QP2 = 1971 SV3 = 1971 UV3 = 1983 EJ

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nakano

M	309.76687		(1950.0)		P		Q
n	0.20528039	Peri.	59.88291	+0.49732325			-0.86756531
a	2.8460186	Node	0.29416	+0.78532818			+0.45010666
e	0.0501721	Incl.	1.70778	+0.36868583			+0.21150515
P	4.80	H	12.6	G	0.15		

Residuals in seconds of arc

710926	805	1.0+	1.3+	830312	046	0.6+	0.1+	900829	675	(3.9+	0.9+)
711020	805	1.7-	0.5+	830312	046	2.8-	1.2-	900914	675	1.8-	1.5-
711020	805	0.2+	0.5-	900824	675	1.8+	1.0+	900914	675	1.4-	1.7-
830310	046	0.3+	1.5+	900824	675	1.8+	0.5+	900920	675	0.2-	0.4-
830310	046	0.8+	3.0-	900829	675	1.2+	0.6-	900920	675	0.6+	1.1-

1990 QY2 = 1978 NH7

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 320.59241

(1950.0)

P

Nagata

Q

n	0.25255308	Peri.	49.20060	+0.65894341	-0.75219246
a	2.4787588	Node	359.57971	+0.67735503	+0.59355471
e	0.0982131	Incl.	2.31454	+0.32708370	+0.28618055
P	3.90	H	13.7	G	0.15

Residuals in seconds of arc

780710	675	1.7-	0.9+	Y	900823	675	1.1-	0.1+	900828	675	1.7+	0.1+
780711	675	1.8+	1.0-	Y	900823	675	0.8-	0.5+	900914	675	1.0+	0.2+
780713	675	(9.9-	0.4+)	Y	900827	675	0.2+	2.0-	900914	675	0.1-	0.3-
900822	675	0.1+	1.9+		900827	675	0.5+	0.1-	900919	675	0.5-	0.2-
900822	675	0.8-	0.2+		900828	675	0.3+	0.1+	900919	675	0.1+	0.0

1990 QM4 = 1979 HU3 = 1979 HF4

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 82.13690

(1950.0)

P

Nakano

Q

n	0.28519700	Peri.	123.67319	-0.14943119	+0.98685664
a	2.2858062	Node	137.59723	-0.93466489	-0.12068180
e	0.1415939	Incl.	5.23409	-0.32260172	-0.10747035
P	3.46	H	13.8	G	0.15

Residuals in seconds of arc

790425	095	1.2+	0.3-		900827	675	0.2-	2.5-	900918	675	1.5+	0.0
790430	095	1.1-	0.6+		900827	675	0.5+	0.1-	900918	675	0.6+	0.9+
900823	675	0.7-	0.4+		900913	675	0.2-	1.2+				
900823	675	1.0-	0.9-		900913	675	0.5-	1.1+				

1990 QV5 = 1987 SY2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 15.00722

(1950.0)

P

Nakano

Q

n	0.31228531	Peri.	165.93851	+0.96164823	+0.27428365
a	2.1516337	Node	178.14113	-0.25473534	+0.89455072
e	0.0939718	Incl.	1.89928	-0.10169848	+0.35291286
P	3.16	H	14.4	G	0.15

Residuals in seconds of arc

870920	071	0.5+	3.2-		900822	675	0.3+	0.2-	900913	675	0.0	2.0+
870920	071	3.2-	2.9+		900822	675	0.7+	0.5-	900913	675	0.1+	1.0+
870921	071	1.1+	0.7-		900829	675	0.6-	0.8-				
870921	071	1.9+	0.3+		900829	675	0.7-	1.1-				

1990 SK

Id. R. H. McNaught (1976 obs.)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 355.98958

(1950.0)

P

Williams

Q

n	0.28461024	Peri.	326.36305	+0.93366628	-0.16286267
a	2.2889468	Node	46.59721	+0.33797145	+0.69534756
e	0.2681957	Incl.	26.04187	-0.11850142	+0.69997680
P	3.46	H	14.0	G	0.15

Residuals in seconds of arc

760914	413	0.2-	0.9-		900920	413	0.1+	0.7+	901013	413	0.6+	0.4-
760914	413	0.1+	0.6+		900921	413	0.2-	0.4+	901106	413	0.1-	0.3+
900920	413	0.8-	0.6+		900927	413	0.2+	1.5-				

1990 SQ

Epoch 1990 Oct. 16.0 ET = JDE 2448180.5

Williams

M	344.99273		(1950.0)		P		Q
n	0.34823036	Peri.	51.96272		+0.63971666		-0.76855159
a	2.0008981	Node	358.18036		+0.57671604		+0.48817199
e	0.4481810	Incl.	17.48798		+0.50809567		+0.41354150
P	2.83	H	12.5	G	0.15		

From 34 observations 1990 Sept. 23-Nov. 18.

1990 SA1 = 1934 PE = 1951 JV = 1969 TT2 = 1982 FM1 = 1983 RA5

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Kaneda

M	75.94129		(1950.0)		P		Q
n	0.28324886	Peri.	29.75894		+0.29022678		+0.95339214
a	2.2962752	Node	257.21660		-0.89381610		+0.23925772
e	0.1428324	Incl.	4.85484		-0.34184967		+0.18384553
P	3.48	H	12.8	G	0.15		

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

340814	094	(0.07+ 0.05+)X	830905	095	1.8+	1.4+	900918	675	0.0	1.2-
510503	711	(1.4+ 10.6-)Y	830907	095	2.3+	0.3+	900918	675	0.3+	0.9+
510504	711	2.4- 1.7- Y	830909	095	1.1+	0.0	900920	657	0.1+	1.1-
691009	095	0.5+ 2.8+	830912	095	(0.1+ 12.1-)		900920	657	0.4+	1.1-
820323	046	(5.4- 2.3-)	900916	675	0.4-	0.6-	900920	675	0.1+	1.4-
820323	046	(4.9- 0.4+)	900916	675	0.0	1.9-	900920	675	0.9-	0.4-
820324	046	0.3+ 2.8-	900917	675	0.0	1.5-	900921	657	1.3-	0.6-
820324	046	1.1+ 1.7-	900917	675	0.1-	2.2-	900921	657	0.2-	0.1-
820325	046	0.5- 2.8-	900918	675	0.2+	1.9-				
820325	046	1.9- 0.4-	900918	675	0.6-	0.6+				

1990 SH1 = A904 SD = 1963 VD = 1981 UV

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

Marsden

M	1.07457		(1950.0)		P		Q
n	0.21776304	Peri.	176.06768		+0.92254663		-0.37947938
a	2.7361977	Node	206.57484		+0.34961792		+0.89876615
e	0.2834564	Incl.	9.00502		+0.16332489		+0.21957870
P	4.53	H	13.5	G	0.15		

Residuals in seconds of arc

040919	024	1.1- 3.7+	811030	704	0.1-	1.7-	900918	675	0.7+	1.6-
631111	760	(51.5+ 28.3-)X	811031	704	(1.2+ 5.6-)		901011	033	0.2+	0.4+
811023	330	1.7+ 0.7+	900916	675	0.8+	0.5-	901012	033	1.1-	0.8+
811026	704	(0.6+ 2.9+)	900916	675	0.0	1.4-	901012	033	0.7-	0.4+
811026	704	(0.3+ 4.6+)	900917	675	0.5+	1.2-	901013	033	0.1+	1.1+
811027	704	0.7- 2.3+	900917	675	0.8+	1.8-	901014	033	1.2-	1.3+
811028	330	0.1- 2.1-	900918	675	0.2+	0.9-				

1990 SZ1 = 1981 AL1 = 1985 YF = 1987 FM1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Kaneda

M	338.30601		(1950.0)		P		Q
n	0.18119607	Peri.	227.36311		+0.68526545		-0.72828765
a	3.0929308	Node	179.35842		+0.72061861		+0.67746387
e	0.2181705	Incl.	14.96550		+0.10545178		+0.10314939
P	5.44	H	12.1	G	0.15		

Residuals in seconds of arc

810103	688	0.4+ 0.6+	900916	400	2.0-	1.0+	901011	400	(1.0+ 4.6+)
810103	688	0.1- 0.1+	900916	400	1.4-	0.6+	901015	400	0.7+ 0.2-
851217	688	0.1- 0.5-	900926	392	2.8+	0.2-	901015	400	(4.4- 3.6+)
851217	688	0.1- 0.2-	900926	392	(5.0+ 0.2+)		901023	392	0.1+ 0.9-
870322	033	0.4- 0.6+	900926	392	0.5+	0.7+	901023	392	1.2+ 2.5+
870322	033	0.4+ 0.3+	901011	400	(0.9+ 3.6+)		901024	400	0.8- 1.2-
900916	400	(3.1- 0.2+)	901011	400	0.2+	0.6-	901024	400	1.2- 0.6-

1990 SM2 = 1947 LL = 1981 WN6 = 1983 CG = 1985 PL2 = 1986 WS6
 Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
 M 92.84050 (1950.0) P Q
 n 0.21163856 Peri. 195.52626 +0.26635476 +0.95351412
 a 2.7887282 Node 90.08011 -0.86860539 +0.30083654
 e 0.0365898 Incl. 8.10264 -0.41782751 -0.01755562
 P 4.66 H 12.2 G 0.15

Residuals in seconds of arc

470615	690(65.5- 65.6-)Y	830215	688	0.3-	1.4-	900917	675	0.0	0.0
470616	690(33.2- 26.2-)Y	850813	095	1.7+	3.3-	900919	675	0.0	1.1-
811124	095 1.0- 1.7+	861128	010	1.2+	1.1-	900919	675	0.9+	0.3+
830211	688 0.3+ 0.3-	861128	010	0.4-	0.2+	900930	372	1.0-	0.0
830211	688 0.1+ 0.2+	861128	010	0.4-	0.1-	900930	372	0.6-	0.9+
830215	688 0.7- 1.6-	900917	675	0.5+	0.1-				

1990 SW3 = 1981 WU7 = 1983 EE3

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams
 M 34.40762 (1950.0) P Q
 n 0.21190823 Peri. 252.14671 +0.94691531 +0.24011601
 a 2.7863618 Node 93.54043 -0.14694456 +0.91468248
 e 0.1383675 Incl. 12.36709 -0.28593477 +0.32511577
 P 4.65 H 12.0 G 0.15

Residuals in seconds of arc

811125	095 0.3- 0.7+	900925	675	0.9-	0.4+	901112	413	0.5-	0.3-
830314	095 0.0 0.1-	901015	675	0.4+	0.1-	901112	413	1.7+	0.3-
900923	675 1.1- 0.6+	901015	675	0.3+	1.5-	901113	413	0.4-	0.1-
900923	675 0.6- 0.8+	901017	675	1.2+	0.4-				
900925	675 0.4+ 0.3+	901017	675	0.5-	0.1+				

1990 SB4 = A901 DA = 1948 OB = 1959 ER = 1984 FF2 = 1986 PO4

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams
 M 337.95456 (1950.0) P Q
 n 0.23813575 Peri. 75.63788 +0.64108860 -0.75873913
 a 2.5778223 Node 333.38643 +0.56652443 +0.56930323
 e 0.0827800 Incl. 14.92989 +0.51774075 +0.31655769
 P 4.14 H 12.0 G 0.15

Residuals in seconds of arc

010222	024 3.1+ 4.5+	840330	095	0.2+	0.7+	900924	675	0.2+	0.1+
480727	078(55.6- 10.2-)X	860809	071	0.8-	2.2+	900924	675	0.1+	0.4-
590306	690 1.0- 1.3-	860809	071	0.9+	3.1+	901015	675	0.3+	1.3-
590307	690 1.3- 1.9-	860809	071	(0.7+ 4.2+)		901015	675	0.2-	1.1-
590309	690 (3.4+ 2.6-)	900922	675	0.1+	0.2-	901019	675	0.3+	0.3-
590310	690 1.1- 2.2-	900922	675	0.2+	0.7-				

1990 SK4 = 1977 KU1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Williams
 M 15.80736 (1950.0) P Q
 n 0.23051371 Peri. 251.42824 +0.64974118 +0.70756753
 a 2.6343383 Node 62.36846 -0.52358911 +0.68153328
 e 0.3419360 Incl. 18.27548 -0.55108152 +0.18670987
 P 4.28 H 13.5 G 0.15

Residuals in seconds of arc

770518	675 0.5+ 1.0-	900922	413	0.0	1.0+	901013	413	0.2+	0.5-
770519	675 0.6- 0.8+	900922	413	0.9-	0.4-	901016	413	1.1+	0.1-
900725	413 0.2+ 0.3-	900923	413	0.1-	0.5-	901106	413	0.4+	1.0-
900922	413 0.3- 0.7+	900928	413	0.2-	0.9+				

1990 TF = 1968 QS

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 355.68645

(1950.0)

P

Williams

Q

n	0.22355868	Peri.	40.20395	+0.96708425	-0.23358026
a	2.6886959	Node	332.79676	+0.13668127	+0.81144349
e	0.1922192	Incl.	12.75588	+0.21463060	+0.53572355
P	4.41	H	13.5	G 0.15	

Residuals in seconds of arc

680827 095	0.1-	0.1+	901009 413	1.0+	1.0+	901016 413	0.7-	0.5-
900822 675	0.3+	0.4-	901011 413	0.2-	0.1-	901112 413	0.2-	0.2+
900822 675	0.5-	0.1+	901011 413	0.7+	0.5+	901113 413	0.2+	0.3-
901009 413	0.4+	0.2-	901012 413	1.1-	0.5-			

1990 TJ = 1978 UP = 1982 UR1 = 1986 UK2

Id. G. V. Williams, R. Nagata

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 342.91849

(1950.0)

P

Williams

Q

n	0.24495669	Peri.	351.41951	+0.67792326	-0.73174242
a	2.5297436	Node	55.86391	+0.67939476	+0.58699304
e	0.0656646	Incl.	4.88748	+0.28078962	+0.34639890
P	4.02	H	14.0	G 0.15	

Residuals in seconds of arc

781028 688	(17.0+	5.6+)	Y 821021 046	2.6-	0.6-	901012 413	1.7-	0.4-
821016 046	1.3+	1.1-	821021 046	0.4-	0.5+	901012 413	0.6+	0.4+
821016 046	0.1+	0.4-	861027 010	(26.3-	4.4-)	901013 413	0.8+	0.6+
821020 046	(3.7-	0.1-)	861027 010	(18.9-	5.0-)	901016 413	0.1+	0.1-
821020 046	1.6+	1.4+	861027 010	(18.4-	4.6-)	901028 413	0.1+	0.3-

1990 TN = 1968 US2 = 1974 MR = 1979 VU

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 298.26341

(1950.0)

P

Nakano

Q

n	0.26863801	Peri.	64.07558	-0.20088684	-0.97437741
a	2.3787990	Node	37.95421	+0.82957151	-0.22413014
e	0.0970447	Incl.	9.46690	+0.52101400	-0.01882410
P	3.67	H	13.0	G 0.15	

Residuals in seconds of arc

681023 095	2.7+	2.9-	901012 413	1.4-	0.6-	901022 399	0.3-	0.3+
740622 808	0.3+	0.5+	901012 413	1.4+	0.3+	901022 399	0.7-	0.9+
740622 808	0.3-	0.4-	901013 413	0.2+	1.6+	901028 413	0.8+	0.1+
791111 095	2.5-	0.6+	901016 413	0.0	0.8+	901113 413	0.9+	2.5-
791116 095	1.5-	2.3+	901022 399	0.0	0.8-			

1990 TR

Epoch 1990 Oct. 16.0 ET = JDE 2448180.5

M 13.67585

(1950.0)

P

Marsden

Q

n	0.31406819	Peri.	335.02594	+0.97980433	+0.19728758
a	2.1434832	Node	13.71476	-0.15248009	+0.84256313
e	0.4368323	Incl.	7.89698	-0.12935721	+0.50116363
P	3.14	H	14.5	G 0.15	

From 39 observations 1990 Sept. 24-Nov. 15.

1990 TX = 1965 UE2 = 1965 WS = 1982 JF1

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Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 11.22169

(1950.0)

P

Nakano

Q

n	0.27511039	Peri.	298.38351	+0.96804174	-0.23917058
a	2.3413413	Node	75.53668	+0.24859625	+0.87542463
e	0.2652180	Incl.	4.46895	+0.03309208	+0.42003470
P	3.58	H	13.8	G 0.15	

Residuals in seconds of arc

651024	330	0.7-	1.3-	901015	675	1.6+	0.4-	901018	871	3.0-	0.3+
651126	330	0.5+	1.8+	901015	675	0.3+	0.2-	901020	374	0.4+	0.9-
820515	675	0.3+	0.7+	901015	374	2.0+	1.5-	901020	374	1.5+	1.5-
820516	675	1.3-	0.0	901015	374	1.0+	1.2-	901026	871	0.5-	2.4+
820516	675	0.2+	2.2+	901017	675	0.4+	0.5+	901026	871	2.6-	2.9+
820517	675	0.4+	0.8+	901017	675	0.6+	0.4-	901110	871	(1.7-	4.7-)
820518	675	1.5+	0.7-	901018	871	2.2-	1.6+	901110	871	(1.5+	5.6-)

1990 TE1 = 2546 T-3

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Kaneda

M	24.64496		(1950.0)			P		Q			
n	0.22931737	Peri.	342.24629			+0.99715512		-0.00833477			
a	2.6434925	Node	18.71520			+0.05104432		+0.80596408			
e	0.2966689	Incl.	13.50189			-0.05546293		+0.59190577			
P	4.30	H	13.2			G	0.15				

Residuals in seconds of arc

771017	675	0.1+	0.2-	771022	675	0.6-	0.5+	901017	372	0.2-	1.2-
771017	675	0.3+	0.2+	771022	675	0.3-	0.9+	901026	372	0.8-	0.6+
771021	675	0.6+	0.4-	901015	372	0.6+	0.2+	901026	372	1.1+	0.7-
771021	675	0.3-	1.1-	901016	372	0.6-	1.0+				

1990 TG1

Epoch 1990 Oct. 16.0 ET = JDE 2448180.5

Marsden

M	66.42128		(1950.0)			P		Q			
n	0.25166111	Peri.	33.29523			-0.53788789		+0.84051173			
a	2.4846124	Node	204.35652			-0.80372902		-0.53453772			
e	0.6923226	Incl.	9.05909			-0.25435462		-0.08837113			
P	3.92	H	15.0			G	0.15				

From 18 observations 1990 Oct. 14-28.

1990 TK1 = 1975 VU4 = 1979 ON4 = 1985 UB4 = 1985 VT3

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Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Kaneda

M	349.13868		(1950.0)			P		Q			
n	0.19695459	Peri.	280.77015			+0.64844657		-0.76014778			
a	2.9256698	Node	128.72497			+0.71740052		+0.59211564			
e	0.0717568	Incl.	3.02268			+0.25466358		+0.26753395			
P	5.00	H	12.0			G	0.15				

Residuals in seconds of arc

751102	095	1.3+	4.3-	851021	095	3.0-	0.1-	901019	400	4.0-	2.0+
790724	675	1.5-	1.2+	851111	095	3.5+	0.1+	901111	400	0.8+	0.9-
790724	413	0.2-	1.7-	901015	400	0.4-	0.1+	901111	400	1.6+	1.0-
790725	675	0.7-	0.6+	901015	400	0.1+	0.2+				
790727	675	2.5+	0.9-	901019	400	0.2+	4.0+				

1990 TL1 = 1976 UT = 1979 SU7 = 1979 TM1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Kaneda

M	17.96473		(1950.0)			P		Q			
n	0.27109590	Peri.	180.32703			+0.97625869		-0.21568731			
a	2.3643989	Node	192.18427			+0.19893812		+0.92924298			
e	0.1749778	Incl.	5.42366			+0.08568898		+0.29997743			
P	3.64	H	13.8			G	0.15				

Residuals in seconds of arc

761031	809	0.7+	0.7-	761102	809	1.2-	0.7+	901019	400	1.7-	0.8+
761031	809	1.7+	0.5-	790923	095	0.1-	0.1+	901019	400	(4.3-	0.1-)
761101	809	0.1+	0.2-	791014	095	0.3+	0.5-	901111	400	0.8-	2.1+
761101	809	1.7-	0.4+	901015	400	0.0	2.7-	901111	400	1.3+	0.6-
761102	809	0.4+	0.4-	901015	400	1.1+	1.0+				

1990 TN1 = 1986 AS2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 236.13705

(1950.0)

P

Williams

Q

n	0.35419843	Peri.	196.69730	-0.88758578	-0.41526493
a	1.9783583	Node	316.95767	+0.44892899	-0.68282347
e	0.0654125	Incl.	16.98335	+0.10321944	-0.60108830
P	2.78	H	13.5	G	0.15

Residuals in seconds of arc

860112	688	0.9+	0.2-	901017	675	1.1+	1.0-	901119	675	0.5-	0.5+
860112	688	1.0-	0.1+	901017	675	0.0	0.3+	901119	675	1.7-	0.7+
901014	675	0.2-	0.3-	901118	675	2.3+	0.3-				
901014	675	0.5-	0.3+	901118	675	0.5-	0.2-				

1990 TJ2 = 1969 UK2 = 1985 VQ2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 309.06913

(1950.0)

P

Kaneda

Q

n	0.18612130	Peri.	223.52085	+0.14389064	-0.98476195
a	3.0381228	Node	218.51328	+0.94544084	+0.16595156
e	0.0748214	Incl.	9.02410	+0.29229625	-0.05199986
P	5.30	H	12.4	G	0.15

Residuals in seconds of arc

691018	095	0.0	0.2-	901010	033	0.3+	0.1+	901012	033	1.0-	0.1-
851109	095	1.2+	2.0+	901011	033	0.5-	0.4+	901013	033	0.3+	0.4-
851111	095	1.2-	1.9-	901011	033	0.9+	0.1+	901014	033	0.1-	0.0

1990 TZ2 = 1938 DY1 = 1971 BW2 = 1988 FZ

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Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 332.38452

(1950.0)

P

Williams

Q

n	0.23784561	Peri.	282.39624	+0.39656849	-0.90722140
a	2.5799183	Node	143.21986	+0.90667765	+0.36314028
e	0.1354867	Incl.	13.55126	+0.14376739	+0.21231692
P	4.14	H	13.0	G	0.15

Residuals in seconds of arc

380224	024	0.5+	2.5+	901015	675	1.5-	1.5+	901022	399	1.7+	1.1-
710127	805	0.2-	1.3-	901016	399	0.1+	1.2-	901022	399	(0.2+	3.6-)
880317	033	0.1+	0.3-	901016	399	2.1-	2.8-	901022	399	1.8+	1.5-
880318	033	0.7+	0.7-	901016	399	1.1+	0.4-	901112	413	0.3+	0.2-
880318	033	0.6-	0.3-	901017	675	0.3-	2.2+	901112	413	0.5+	0.5+
880319	033	0.5-	0.2-	901017	675	0.2+	2.1+	901113	413	(3.6-	1.8-)
901015	675	1.7-	0.9+	901019	399	(4.9+	0.7-)				

1990 TG3 = 1931 BK = 1978 GN3 = 1983 VQ7 = 1988 BA1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M 348.33296

(1950.0)

P

Nakano

Q

n	0.27702043	Peri.	197.78944	+0.72499396	-0.68646085
a	2.3305666	Node	205.83453	+0.64652503	+0.70639291
e	0.1097734	Incl.	7.40610	+0.23746400	+0.17257046
P	3.56	H	12.7	G	0.15

Residuals in seconds of arc

310117	690	0.1-	0.5-	901010	403	0.8+	2.3+	901019	403	0.3-	0.0	
310119	690	(31.0+	79.6-)	X	901010	403	(1.5-	3.0+)	901019	403	(4.0-	0.4+)
780411	095	0.0	0.1-	901014	046	1.5-	1.7-	901026	886	1.8+	0.6+	
831101	330	0.1-	1.8+	901014	046	0.8-	2.1-	901026	886	0.9-	1.0+	
880122	220	2.4-	0.2+	Y	901015	046	1.2+	1.9-				
880122	220	2.3+	0.4-	Y	901015	046	(1.1+	3.1-)				

1990 TN4 = 1982 JF = 1985 WR
 Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 M 202.96175 (1950.0)
 n 0.18061365 Peri. 118.74718
 a 3.0995763 Node 77.60550
 e 0.0863654 Incl. 14.42359
 P 5.46 H 12.0 G 0.15

Williams
 Q
 +0.26674338
 -0.82967317
 -0.49039820

Residuals in seconds of arc

820513	033	0.2-	0.7-	901009	413	1.2+	0.8+	901029	413	2.6+	0.6-
820513	033	0.2+	0.8+	901020	413	2.7-	0.2+	901029	413	1.2-	0.5-
851120	095	0.1+	0.1-	901020	413	0.6-	1.7+	901119	413	0.9-	0.1-
901009	413	0.5+	1.4-	901022	413	0.9+	0.1+				

1990 TO4 = 1982 XJ3
 Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 M 322.44313 (1950.0)
 n 0.24287724 Peri. 5.82415
 a 2.5441624 Node 82.59998
 e 0.1676044 Incl. 10.41520
 P 4.06 H 14.5 G 0.15

Williams
 Q
 -0.98336689
 -0.04826432
 +0.17510031

Residuals in seconds of arc

821213	381	1.0+	0.3+	901009	413	0.8-	0.4+	901120	413	0.2-	1.2-
821214	381	1.3-	0.9+	901022	413	0.1+	0.2-	901120	413	0.4-	0.2-
821214	381	0.2+	0.9-	901119	413	1.4+	0.9+				

1990 UD = 1934 TC = 1967 UJ = 1980 TL8
 Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 M 22.28645 (1950.0)
 n 0.29959273 Peri. 296.42061
 a 2.2119834 Node 65.32298
 e 0.2155573 Incl. 4.78788
 P 3.29 H 13.5 G 0.15

Nakano
 Q
 -0.02901579
 +0.90164045
 +0.43151197

Residuals in seconds of arc

341009	024	0.5-	0.9+	901026	385	0.5+	1.1+	901107	385	0.1+	0.3+
671031	095	0.4+	0.4-	901026	385	1.2+	0.6+	901110	385	0.6-	1.8-
801012	095	0.3+	0.6-	901027	385	(2.9+	0.4+)	901110	385	2.2-	0.2+
901019	385	1.1+	1.2-	Y 901028	881	1.1+	0.4-	901111	385	(3.2-	1.6+)
901019	385	(2.7-	1.0+)	Y 901028	881	0.8-	0.3-	901111	385	0.9-	0.2+
901020	385	0.3-	0.8+	901028	881	0.0	0.3-				
901020	385	0.7-	0.2-	901107	385	1.2+	0.9+				

1990 UE = 1969 JG = 1982 DE = 1989 GV7
 Epoch 1990 Nov. 5.0 ET = JDE 2448200.5
 M 111.35013 (1950.0)
 n 0.29427852 Peri. 229.38511
 a 2.2385339 Node 35.11060
 e 0.1287314 Incl. 3.30634
 P 3.35 H 13.2 G 0.15

Kaneda
 Q
 +0.99476578
 -0.07224940
 -0.07225691

Residuals in seconds of arc

690505	095	3.0-	2.6-	820220	688	0.4+	1.1-	901016	399	0.1-	0.5+
690516	095	1.6+	0.7+	890404	391	0.5+	0.5-	901019	399	0.4-	1.6-
820216	046	2.0-	0.7+	890404	391	0.3-	1.1+	901019	399	1.1-	1.0-
820216	046	1.0-	1.7+	901016	399	0.2-	0.7+	901019	399	1.5+	1.3-
820220	688	2.1+	1.7-	901016	399	0.7+	0.3+	901022	399	0.2+	0.0

1990 UF = 1977 EQ6 = 1979 SS7 = 1979 TG1
 Id. S. Nakano, N. S. Chernykh (d)

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	55.16611		(1950.0)		P		Nakano		Q
n	0.18112366	Peri.	108.25339	+0.72785545			+0.68446189		
a	3.0937551	Node	208.59807	-0.65743365			+0.67924301		
e	0.1755040	Incl.	4.99706	-0.19495495			+0.26484118		
P	5.44	H	12.8	G	0.15				

Residuals in seconds of arc

770312	381	0.4+	0.2+	770315	381	0.1+	0.2-	901017	372	2.9-	0.8-
770312	381	1.4-	1.2+	790923	095	0.1+	0.3+	901027	372	0.9+	0.8-
770314	381	1.2+	0.1-	791014	095	0.2-	0.1+	901027	372	2.2+	2.5+
770314	381	0.5+	0.5-	901015	372	0.9-	0.5-	901028	372	2.2+	0.6-
770315	381	0.7-	0.3-	901016	372	1.3-	0.1+				

1990 UH = 1974 HC2 = 1979 SJ2 = 1981 EJ49 = 1985 JE2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	252.39881		(1950.0)		P		Nakano		Q
n	0.27443946	Peri.	309.07225	-0.91424917			-0.39517082		
a	2.3451557	Node	207.98839	+0.40489522			-0.88330040		
e	0.1674023	Incl.	10.97923	+0.01443315			-0.25223092		
P	3.59	H	12.9	G	0.15				

Residuals in seconds of arc

740424	805	(9.9-	4.7-)	850514	675	0.1-	1.9-	901020	886	1.1-	2.1- Y
740424	805	0.8+	0.8+	901011	033	0.7+	0.0	901020	886	(3.0-	0.3-)Y
740425	805	0.6-	0.3-	901012	033	1.1+	0.0	901021	886	1.6-	0.3- Y
790922	095	(1.2-	4.7-)	901012	033	0.8+	0.0	901021	886	0.3+	0.1+ Y
790928	095	0.3-	1.3+	901018	886	0.6-	0.2+	901024	886	(2.7+	2.8-)
810308	095	0.2-	0.6-	901018	886	0.8-	1.2+	901024	886	1.7+	2.0-

1990 UJ = 1978 RW10

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	62.03829		(1950.0)		P		Urata		Q
n	0.25338775	Peri.	154.50032	+0.71970650			+0.69322820		
a	2.4733173	Node	161.44833	-0.65574329			+0.69679492		
e	0.1565832	Incl.	6.89110	-0.22808616			+0.18415079		
P	3.89	H	13.0	G	0.15				

Residuals in seconds of arc

780906	809	2.1+	3.6+	901020	385	1.9-	0.4-	901026	385	0.4+	1.4-
780910	809	0.0	0.1-	901020	385	1.4-	0.7+	901026	385	1.0-	0.2-
780910	809	0.7-	0.9-	901021	385	2.9+	1.7+				
780910	809	1.3-	2.7-	901021	385	1.0+	0.2-				

1990 UN

Epoch 1990 Oct. 16.0 ET = JDE 2448180.5

M	331.43714		(1950.0)		P		Marsden		Q
n	0.44127530	Peri.	96.98247	-0.25465486			-0.96699303		
a	1.7086888	Node	7.78705	+0.85996203			-0.23055672		
e	0.5276805	Incl.	3.67411	+0.44228522			-0.10848077		
P	2.23	H	23.5	G	0.15				

From 22 observations 1990 Oct. 22-Nov. 6.

1990 UO

Epoch 1990 Oct. 16.0 ET = JDE 2448180.5

M	282.71726		(1950.0)		P		Marsden		Q
n	0.71891943	Peri.	332.92893	-0.97465818			-0.08321876		
a	1.2340968	Node	205.07555	+0.07216371			-0.99557002		
e	0.7582511	Incl.	29.33682	-0.21174002			+0.04376035		
P	1.37	H	20.5	G	0.15				

From 20 observations 1990 Oct. 22-28.

1990 UP

Epoch 1990 Oct. 16.0 ET = JDE 2448180.5

Marsden

M	43.24071	(1950.0)		P		Q
n	0.64600641	Peri.	293.77347	+0.77483035		+0.57910368
a	1.3252918	Node	32.61455	-0.25346408		+0.65198461
e	0.1686234	Incl.	28.05910	-0.57913201		+0.48944356
P	1.53	H	20.5	G	0.15	

From 15 observations 1990 Oct. 24-28.

1990 UQ

Epoch 1990 Oct. 16.0 ET = JDE 2448180.

Bowell

M	41.44348	(1950.0)		P		Q
n	0.50065312	Peri.	159.65629	+0.39565460		+0.91723165
a	1.5707658	Node	133.61838	-0.85117273		+0.38515895
e	0.4913213	Incl.	3.66670	-0.34490930		+0.10167929
P	1.97	H	17.5	G	0.15	

From 8 observations 1990 Oct. 20-27.

1990 UW = 1983 RQ1 = 1988 AE1

Id. S. Nakano, R. Nagata

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nakano

M	323.53665	(1950.0)		P		Q
n	0.29486223	Peri.	107.60243	+0.15548913		-0.98755105
a	2.2355787	Node	333.41741	+0.88492131		+0.14995323
e	0.1013334	Incl.	3.04773	+0.43901868		+0.04750742
P	3.34	H	12.9	G	0.15	

Residuals in seconds of arc

830902	688	0.0	1.8-	880112	046	1.1+	1.2-	901024	886	1.2+	1.7- Y
830902	688	0.7+	1.4-	880112	046	0.6-	0.3+	901026	886	0.5-	0.3+ Y
830906	688	1.2-	1.9+	901015	399	0.7-	0.8+	901026	886	(3.0+	1.9-) Y
830906	688	0.6+	1.3+	901015	399	0.8+	0.9+	901110	877	0.1+	0.6+
880109	046	0.3-	0.4-	901019	886	(3.4+	1.1-) Y	901110	877	1.9-	0.5-
880109	046	1.3+	0.6+	901019	886	0.2+	1.4- Y	901112	877	0.3+	1.2+
880110	046	0.5-	0.0	901021	886	(2.6-	1.3+) Y	901112	877	0.4+	0.1-
880110	046	0.9-	0.6+	901024	886	(0.3-	2.6-)				

1990 UY = 1971 BN2 = 1979 QN7 = 1979 SK3 = 1980 XU2 = 1982 DG6

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Williams

M	34.01120	(1950.0)		P		Q
n	0.18845055	Peri.	192.59579	+0.99912926		-0.01156260
a	3.0130368	Node	167.85124	+0.02010441		+0.97534859
e	0.0971408	Incl.	10.98108	-0.03655853		+0.22036657
P	5.23	H	12.0	G	0.15	

Residuals in seconds of arc

710127	805	2.4-	1.0-	901019	402	1.0-	0.3-	901028	402	0.6-	0.2+
790820	095	1.6+	2.7+	901020	402	0.3-	0.1-	901108	413	1.2+	0.5-
790924	095	1.6-	0.7-	901020	402	1.1-	1.0-	901109	413	0.2-	0.8-
801210	095	2.6+	5.0+	901021	402	0.2+	1.7-	901109	413	1.3+	0.5+
820227	010	0.5+	0.8-	901021	402	0.7-	0.9-				
901019	402	0.5+	0.4-	901028	402	0.0	0.5+				

1990 UE1 = 1975 VU8 = 1986 QX5

Id. S. Nakano

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Kawanishi

M	353.92204	(1950.0)		P		Q
n	0.26299130	Peri.	179.27718	+0.68648957		-0.72688474
a	2.4127286	Node	227.36970	+0.66697338		+0.64001175
e	0.2013274	Incl.	1.49945	+0.28961801		+0.24904525
P	3.75	H	13.7	G	0.15	

Residuals in seconds of arc

751107	095	0.5-	1.4+	901022	399	0.1-	1.3-	901027	399	0.3-	0.9-
860829	095	0.2-	2.7+	901022	399	0.4+	0.3-	901027	399	2.0-	1.8-
860906	095	0.1+	2.5-	901026	896	(4.9+	3.5+)Y	901107	896	0.3+	0.6+
901021	896	(2.1+	3.1+)	901026	896	0.5-	0.2+	901107	896	0.8+	1.0+
901021	896	0.9-	0.5+	901027	896	0.1-	0.4+				
901022	399	2.0+	0.1-	901027	896	0.6+	0.2+				

1990 UK1 = 1980 WK1 = 1983 RM7

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nagata

M	20.55890		(1950.0)			P		Q			
n	0.29113735	Peri.	113.91719			+0.98773464		-0.13910143			
a	2.2546065	Node	254.14009			+0.10239538		+0.91999803			
e	0.1705214	Incl.	4.22866			+0.11787904		+0.36640746			
P	3.39	H	14.3			G	0.15				

Residuals in seconds of arc

801130	095	0.1+	1.2-	901021	877	0.3-	1.0-	901110	877	2.5-	1.2+
830911	095	0.2+	0.7-	901021	877	1.3-	0.4-	901110	877	0.4-	1.1-
901019	877	1.6+	1.3+	901026	877	0.9+	1.2+				
901019	877	2.5+	1.5+	901026	877	1.0-	1.4-				

1990 UH2 = 1981 TT2 = 1989 KH

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nakano

M	51.98142		(1950.0)			P		Q			
n	0.22492645	Peri.	160.80271			+0.86377048		+0.50186353			
a	2.6777849	Node	168.74305			-0.48722345		+0.85468054			
e	0.1883719	Incl.	13.35644			-0.12850631		+0.13286897			
P	4.38	H	13.5			G	0.15				

Residuals in seconds of arc

750123	413	0.1+	0.6+	890601	675	1.1+	0.2+	901022	413	0.7+	1.2-
811005	095	0.2-	1.0+	890602	675	0.1-	1.1+	901108	413	(4.2-	1.8-)
890530	675	(0.2-	9.4+)	890707	413	2.8+	0.8-	901109	413	0.7-	1.4-
890531	675	(3.5+	7.1+)	901020	413	2.0-	1.1-	901109	413	0.9+	0.6+
890531	675	1.4-	0.6+	901020	413	1.2+	2.1+				
890601	675	2.0-	1.7-	901022	413	(17.7+	10.2+)				

1990 UJ2 = 1981 QB2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nakano

M	36.18425		(1950.0)			P		Q			
n	0.22836472	Peri.	223.06954			+0.99566903		+0.06974724			
a	2.6508392	Node	132.82272			-0.04444513		+0.93783715			
e	0.2174778	Incl.	4.80745			-0.08165663		+0.33999530			
P	4.32	H	13.3			G	0.15				

Residuals in seconds of arc

810830	688	0.4-	0.4-	901020	402	1.0-	0.6+	901112	403	0.2+	0.7-
810830	688	0.3+	1.3-	901020	402	0.1-	2.2+	901114	403	0.9+	0.4-
810926	688	0.2+	1.0+	901021	402	0.1-	0.0	901114	403	0.1-	2.7- Y
810926	688	0.2+	0.4+	901021	402	0.2+	1.2+				

1990 UR2 = 1969 AN = 1986 AN1 = 1989 PS

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Kaneda

M	323.44807		(1950.0)			P		Q			
n	0.17651128	Peri.	150.75377			-0.22411714		-0.95738919			
a	3.1474179	Node	311.55160			+0.84010496		-0.09506087			
e	0.2058557	Incl.	14.08700			+0.49395867		-0.27270746			
P	5.58	H	11.8			G	0.15				

Residuals in seconds of arc

690115	095	0.4+	1.3+	860111	688	0.3+	1.0-	860117	688	0.1+	1.1+
860111	688	1.1-	1.2-	860117	688	0.4+	0.4+	890809	675	1.2+	0.2+

890809	675	0.3-	1.4-	901016	399	1.3-	0.5-	901111	399	1.5+	1.8+
890811	675	0.7-	0.9+	901016	399	1.3+	1.3-	901111	399	0.3-	0.5-
890811	675	0.5-	0.8+	901019	399	0.9-	0.5-	901111	399	1.0+	1.4+
901016	399	1.5-	1.5-	901019	399	0.1-	0.5+				

1990 UD3 = 1981 WB

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	19.17194		(1950.0)			P		Nakano		Q	
n	0.21603553	Peri.	140.83842			+0.98379647				-0.14814926	
a	2.7507593	Node	227.99105			+0.11027195				+0.94407319	
e	0.2879545	Incl.	7.81048			+0.14136693				+0.29458038	
P	4.56	H	13.5			G	0.15				

Residuals in seconds of arc

811128	879	0.7+	0.8+	901019	402	0.1+	0.7+	901115	402	0.7-	0.2-
811128	879	1.4+	1.0+	901019	402	0.9+	1.0+	901115	402	0.8+	0.4+
811129	879	0.2+	1.1-	901020	402	0.2-	0.8-				
811129	879	2.3-	0.7-	901020	402	0.9-	1.0-				

1990 UE3 = 1974 DH2 = 1975 EN5 = 1984 UP

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

M	338.76347		(1950.0)			P		Urata		Q	
n	0.17469972	Peri.	60.62685			-0.01420032				-0.99918049	
a	3.1691450	Node	30.25809			+0.88928940				-0.02995063	
e	0.2424646	Incl.	4.31395			+0.45712439				+0.02722695	
P	5.64	H	12.0			G	0.15				

Residuals in seconds of arc

740216	033	0.7+	0.6-	901026	385	(3.9+	5.3-)	901112	896	0.2+	0.7-
740216	033	0.0	1.5-	901026	385	(1.4+	2.2+)	901112	877	1.1+	0.4-
750315	095	(8.5-	4.2-)	901110	385	0.6-	0.4+	901112	877	0.5+	0.7+
750317	095	0.6-	1.2-	901110	385	(3.3+	4.5+)	901114	403	0.1-	0.2- Y
841023	688	0.4-	1.1-	901111	898	(2.3+	1.8+)	901114	403	1.2-	1.0+ Y
841023	688	0.2-	0.0	901111	898	(0.6+	2.3+)	901115	881	0.1+	0.0
841029	688	1.5+	1.6-	901111	374	(2.5-	1.3+)	901115	881	1.0+	0.7-
841029	688	0.6+	0.1-	901111	896	0.4-	1.7-	901115	403	0.2-	0.9- Y
901014	033	0.3-	0.4-	901111	374	1.6-	0.4+	901115	403	0.3+	0.1-
901015	033	0.1+	0.9+	901111	385	0.6-	1.0+	901117	898	(4.4-	0.1+)
901015	033	0.4+	0.5+	901111	385	0.1+	1.9+	901117	898	0.5-	0.6+
901018	033	0.9+	0.6-	901111	877	0.3+	0.5+	901122	898	(2.0-	1.0+)
901018	033	0.0	0.4-	901111	877	0.1-	1.0+	901122	898	(2.3-	1.4+)

1990 UF3 = 1931 AL = 1985 FY1 = 1988 CV7

Id. B. G. Marsden, T. Urata

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

M	241.53056		(1950.0)			P		Marsden		Q	
n	0.29398355	Peri.	145.05384			-0.99738365				+0.04708675	
a	2.2400355	Node	37.76077			-0.06713478				-0.88472707	
e	0.0954680	Incl.	5.13905			+0.02680986				-0.46372498	
P	3.35	H	13.0			G	0.15				

Residuals in seconds of arc

310110	690	3.3+	1.1-	901014	033	0.1-	0.0	901110	887	0.2-	0.2-
310111	690	1.9-	1.7-	901015	033	0.1+	0.5+	901110	887	2.7+	0.0
310112	690	1.8-	0.7+	901015	033	0.2-	0.2+	901111	898	0.9+	0.6+
850322	688	2.1+	0.7+	901018	033	0.5+	0.2-	901111	385	0.2-	0.8+
850322	688	0.9-	1.6+	901018	033	1.0-	0.5-	901111	385	2.5-	0.3+
880210	877	0.1+	0.2+	901026	385	0.7-	3.2+				
880210	877	0.0	0.7-	901026	385	0.5-	1.7-				

1990 UL3

Epoch 1990 Oct. 16.0 ET = JDE 2448180.5 Williams
 M 2.18179 (1950.0) P Q
 n 0.10619672 Peri. 140.18877 +0.96232601 -0.26364676
 a 4.4163348 Node 235.22076 +0.22425959 +0.90787382
 e 0.5823698 Incl. 4.64227 +0.15374097 +0.32596857
 P 9.28 H 15.0 G 0.15
 From 11 observations 1990 Sept. 17-Nov. 15.

1990 VA

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Marsden
 M 134.14485 (1950.0) P Q
 n 1.00930430 Peri. 34.28841 -0.35180423 +0.92574210
 a 0.9842860 Node 215.68954 -0.90324092 -0.37461460
 e 0.2723406 Incl. 13.75276 -0.24574301 +0.05162815
 P 0.98 H 20.0 G 0.15
 From 14 observations 1990 Nov 9-13.

1990 VB

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Bardwell
 M 8.15309 (1950.0) P Q
 n 0.25635034 Peri. 101.20610 +0.96708870 +0.07742978
 a 2.4542198 Node 254.69862 -0.15597224 +0.93301464
 e 0.5288355 Incl. 14.55323 +0.20102762 +0.35140904
 P 3.84 H 16.0 G 0.15
 From 14 observations 1990 Nov. 8-20.

1990 VZ = 1939 EE

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Nakano
 M 7.85105 (1950.0) P Q
 n 0.18406130 Peri. 354.50685 +0.81089673 -0.58446798
 a 3.0607490 Node 41.30352 +0.53853645 +0.72590947
 e 0.2814024 Incl. 2.52217 +0.22896502 +0.36256396
 P 5.35 H 13.1 G 0.15

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

390310	053	2.2-	13.9-	X	390323	053	2.9+	5.9+	X	901110	896	0.3+	0.0
390312	053	(0.03+	0.00-)	X	390408	053	(0.05-	0.00+)	X	901110	896	2.5+	0.6-
390313	053	(46.5+	21.5+)	X	390411	053	(0.07-	0.02-)	X	901115	403	0.1-	1.3+
390317	053	(0.03+	0.00+)	X	390414	053	(0.05-	0.03-)	X	901115	403	0.5-	1.0+
390319	053	0.8-	8.0+	X	901107	896	0.3+	0.8-		901116	403	1.5-	1.2+
390321	053	(52.6+	44.5+)	X	901107	896	0.8+	0.5-		901116	403	1.9-	1.5-

1990 VK1 = 1980 TW11

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5 Kaneda
 M 27.83582 (1950.0) P Q
 n 0.20012774 Peri. 348.73060 +0.97836775 -0.20582865
 a 2.8946620 Node 23.17888 +0.19365905 +0.87595326
 e 0.1479306 Incl. 3.02384 +0.07275103 +0.43628025
 P 4.92 H 12.4 G 0.15

Residuals in seconds of arc

801010	095	1.1+	1.0+		901113	399	1.3-	1.1-		901121	399	0.6-	0.1+
801017	095	1.2-	0.7-		901113	399	1.7-	1.9-		901121	399	2.4+	1.2+
901112	399	2.4+	0.4+		901115	875	0.5+	0.7+		901124	399	1.3-	0.2-
901112	399	0.8+	1.9-		901115	875	1.6-	0.3-		901124	399	0.6-	1.0+
901112	399	0.0	0.5-		901116	875	1.1+	2.2+					

1990 VV1 = 1982 UO

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	16.29211		(1950.0)		P			Nakano	Q
n	0.25177726	Peri.	174.90890		+0.87030000			-0.48324493	
a	2.4838482	Node	214.51442		+0.44572230			+0.85495611	
e	0.1992332	Incl.	9.66665		+0.20954605			+0.18847914	
P	3.91	H	13.7		G	0.15			

Residuals in seconds of arc

821017	688	0.2+	0.1+	901111	400	0.0	0.6-	901124	400	1.6+	0.8-
821017	688	0.9-	1.1-	901111	400	1.2+	0.5+	901124	400	1.4-	0.7+
821024	688	0.3+	0.5-	901113	400	0.8-	0.0				
821024	688	0.4+	1.7+	901113	400	0.5-	0.1+				

1990 VV2 = 1933 UC1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	341.97792		(1950.0)		P			Nakano	Q
n	0.27714088	Peri.	210.96956		+0.24001517			-0.96935634	
a	2.3298913	Node	225.20173		+0.90504424			+0.24294617	
e	0.2498729	Incl.	4.23119		+0.35112339			+0.03640657	
P	3.56	H	14.6		G	0.15			

Residuals in seconds of arc

331020	012	2.9+	0.4-	901112	875	2.5+	1.9+	901121	364	0.0	2.7+
331023	012	3.0-	0.7+	901112	875	0.9+	0.2+	901121	364	0.8+	0.3+
901112	364	2.3-	0.1-	901115	875	0.1+	2.2-	901122	364	(1.8-	6.9+)
901112	364	1.7-	1.3-	901115	875	0.3-	1.8-	901122	364	(7.4-	1.1-)

1990 VG3 = 1982 DX6

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	25.26162		(1950.0)		P			Kaneda	Q
n	0.30912713	Peri.	261.36675		+0.94311699			-0.32506505	
a	2.1662636	Node	117.57778		+0.32749511			+0.87224370	
e	0.1482979	Incl.	4.51237		+0.05724771			+0.36540888	
P	3.19	H	14.2		G	0.15			

Residuals in seconds of arc

820220	033	0.5-	0.5+	820221	033	0.4+	0.4+	901113	400	0.9-	1.1+
820220	033	0.2+	0.3+	901111	400	1.2+	0.5+	901124	400	0.6-	1.2+
820221	033	0.4-	1.0-	901111	400	0.6+	1.8-	901124	400	1.1+	1.6-
820221	033	(3.1+	1.6-)	901113	400	1.4-	0.3+				

1990 VO3 = 1958 TD1 = 1974 VJ = 1976 EH = 1979 WO4 = 1988 PC3

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

M	44.38485		(1950.0)		P			Kaneda	Q
n	0.18859735	Peri.	143.98986		+0.95142303			-0.28143938	
a	3.0114731	Node	232.83214		+0.23288100			+0.92306571	
e	0.1065865	Incl.	9.01358		+0.20139679			+0.26218614	
P	5.23	H	12.3		G	0.15			

Residuals in seconds of arc

581009	690	0.7-	0.5-	Y	760307	808	1.1+	1.6+	901113	399	0.7-	0.4+
581011	690	2.1-	3.6+	Y	791117	095	0.6+	2.0-	901117	399	0.3-	0.2+
741112	095	2.6+	1.6+		880804	413	0.9+	0.7+	901117	399	0.1+	0.4+
741117	095	(2.2+	6.6+)		880804	413	0.4-	0.4-	901121	399	0.2-	1.1-
760307	808	0.1-	1.5+		901113	399	1.2-	1.1-	901121	399	0.1+	1.0-

1990 WA

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Williams

M	350.84316		(1950.0)		P		Q	
n	0.25128835	Peri.	11.98322	+0.14685430			-0.89888415	
a	2.4870689	Node	70.71392	+0.86752464			-0.08347524	
e	0.4642846	Incl.	25.93753	+0.47522080			+0.43016180	
P	3.92	H	16.0	G	0.15			

From 11 observations 1990 Nov. 13-21.

2098 P-L = 1990 UM1

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Williams

M	33.33915		(1950.0)		P		Q	
n	0.23132790	Peri.	157.29379	+0.97928332			+0.19825732	
a	2.6281534	Node	191.50316	-0.20249299			+0.95790232	
e	0.2646475	Incl.	11.92576	-0.00087445			+0.20764679	
P	4.26	H	13.0	G	0.15			

Residuals in seconds of arc

600924	675	0.9-	0.3+	601017	675	0.4+	0.6+	901020	402	0.3+	1.6+
600926	675	1.0-	2.0-	601022	675	0.5-	0.5+	901021	402	0.5+	1.6-
600928	675	0.4+	0.0	601025	675	0.7+	0.3+	901021	402	0.0	0.6-
600929	675	0.4+	2.1+	601026	675	0.2+	0.0	901027	413	0.2-	0.3+
600929	675	0.2+	1.3-	901020	402	0.2+	0.4-	901028	413	0.7-	0.3+

2164 P-L = 1990 TA10

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

Marsden

M	35.29886		(1950.0)		P		Q	
n	0.26315220	Peri.	48.34109	+0.93097435			+0.36332047	
a	2.4117498	Node	290.32663	-0.34527916			+0.84431533	
e	0.1881511	Incl.	2.19079	-0.11861304			+0.39386528	
P	3.75	H	15.0	G	0.15			

Residuals in seconds of arc

600926	675	1.4-	0.1-	601025	675	0.1-	0.9+	901011	033	0.4+	0.8-
600928	675	0.2-	0.3+	601026	675	0.8-	1.0+	901011	033	1.3+	0.5-
600929	675	1.5+	0.0	901010	033	0.9-	0.7-				

3535 P-L = 1981 AB4 = 1990 QW2

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nagata

M	95.55724		(1950.0)		P		Q	
n	0.26177668	Peri.	272.97960	-0.31343714			+0.94635406	
a	2.4201860	Node	338.24575	-0.76506799			-0.30066413	
e	0.1792912	Incl.	12.23703	-0.56251945			-0.11838526	
P	3.77	H	13.3	G	0.15			

Residuals in seconds of arc

600926	675	0.5-	0.7-	601022	675	0.2-	0.4-	810108	381	0.7+	0.5-
600928	675	0.0	1.4+	601024	675	1.2+	0.7+	900824	675	0.2-	0.3+
600929	675	0.9-	0.2+	601024	675	0.2-	0.5-	900824	675	0.4+	0.0
601017	675	0.5+	0.9-	601026	675	0.1+	0.1-	900829	675	0.1-	0.8-
601017	675	0.4-	0.6+	810108	381	0.7-	0.5+	900829	675	(4.6+	0.7-)

4004 P-L = 1987 YH5 = 1990 QM8

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

Marsden

M	46.18320		(1950.0)		P		Q	
n	0.22826435	Peri.	323.57821	+0.57850938			+0.81515424	
a	2.6516214	Node	341.71094	-0.72466376			+0.49721989	
e	0.0244874	Incl.	5.33225	-0.37441866			+0.29714634	
P	4.32	H	14.5	G	0.15			

Residuals in seconds of arc

600924	675	0.4-	0.5+	600925	675	0.1+	1.0+	600926	675	0.7-	0.1+
600924	675	0.2+	0.4+	600925	675	0.0	0.6-	600926	675	0.3+	0.0

600928	675	0.2+	0.5-	601026	675	0.9-	0.3-	900816	809	0.2+	0.0
600928	675	1.9+	0.1-	871224	010	0.6-	0.3-	900816	809	0.6-	0.8-
601017	675	0.7-	0.9+	871224	010	0.1+	0.2-	900818	809	2.2+	0.1-
601022	675	0.2-	0.7-	871224	010	0.4+	0.2+	900818	809	0.3-	0.1-
601024	675	0.1-	0.6-	900816	809	0.2-	0.4+	900818	809	0.9-	0.2+

4066 P-L = 1990 TY11

Epoch	1990 Nov. 5.0	ET =	JDE 2448200.5	(J-P)	Marsden
M	345.88750		(1950.0)	P	Q
n	0.29597461	Peri.	46.47654	+0.70373893	-0.71045688
a	2.2299781	Node	358.79218	+0.62805325	+0.62315964
e	0.1754776	Incl.	4.33470	+0.33211541	+0.32699094
P	3.33	H	16.0	G	0.15

Residuals in seconds of arc

600924	675	1.0-	1.1-	600928	675	0.5+	0.3+	901011	033	0.2+	0.0
600924	675	0.1-	0.1-	600928	675	1.3+	1.1+	901012	033	0.4-	0.1+
600925	675	0.2-	0.1-	601017	675	0.8-	0.3-	901012	033	0.5-	0.3-
600926	675	0.1+	0.5-	601022	675	0.3-	0.5+	901013	033	0.8+	0.1-
600926	675	0.3+	1.1-	601024	675	1.0+	1.1-	901014	033	0.4-	0.7+
600927	675	0.6-	1.8+	601026	675	0.0	0.2+				

4550 P-L = 1990 TU3

Epoch	1990 Nov. 5.0	ET =	JDE 2448200.5		Williams
M	338.43594		(1950.0)	P	Q
n	0.29679936	Peri.	52.89304	+0.42504493	-0.90504870
a	2.2258407	Node	11.98068	+0.80590339	+0.37085673
e	0.1531833	Incl.	4.13137	+0.41213655	+0.20821175
P	3.32	H	16.5	G	0.15

Residuals in seconds of arc

600924	675	0.0	0.5+	601022	675	0.6+	0.1-	901013	033	0.3-	0.2-
600926	675	0.1+	0.4+	601026	675	0.2+	0.1+	901014	033	0.3+	0.3+
600927	675	0.4+	0.0	901011	033	0.4-	0.2-	901018	033	0.2+	0.1-
600928	675	0.2-	0.9-	901012	033	0.5+	0.7+				
601017	675	1.0-	0.0	901012	033	0.4-	0.5-				

4611 P-L = 1990 TD10

Epoch	1990 Nov. 5.0	ET =	JDE 2448200.5	(J-P)	Marsden
M	262.98767		(1950.0)	P	Q
n	0.26436812	Peri.	129.99527	-0.74981178	-0.66079017
a	2.4043491	Node	8.82856	+0.52000784	-0.62006268
e	0.1284459	Incl.	12.70086	+0.40911385	-0.42294045
P	3.73	H	14.5	G	0.15

Residuals in seconds of arc

600924	675	0.2+	0.4-	601017	675	0.4-	1.8+	601026	675	0.4-	0.4-
600926	675	0.1+	0.2-	601022	675	0.1-	1.5-	901010	033	0.3-	0.1+
600927	675	0.3-	0.4+	601025	675	0.2+	1.1-	901011	033	0.3-	0.1+
600928	675	0.1+	0.0	601026	675	0.5+	1.5+	901011	033	0.6+	0.2-

4874 P-L = 1990 SU7

Epoch	1990 Nov. 5.0	ET =	JDE 2448200.5	(J-P)	Marsden
M	339.98235		(1950.0)	P	Q
n	0.22958013	Peri.	341.43865	+0.81357001	-0.57950176
a	2.6414803	Node	54.07089	+0.54065217	+0.72367274
e	0.0977374	Incl.	3.38176	+0.21400718	+0.37480057
P	4.29	H	15.0	G	0.15

Residuals in seconds of arc

600926	675	0.4+	0.4-	601025	675	0.2-	0.3-	900922	809	0.5+	0.4-
600927	675	0.1-	0.3+	601026	675	0.1+	0.1-	900925	809	0.8+	0.0
600928	675	0.2-	0.3-	900922	809	0.2-	0.1+	900925	809	0.3+	0.1+
601017	675	0.0	0.6+	900922	809	0.8-	0.1+	900925	809	0.6-	0.2+

6607 P-L = 1990 QP7

Epoch	1990 Nov. 5.0	ET =	JDE 2448200.5	(J-P)	Marsden
M	131.60025		(1950.0)	P	Q
n	0.26075843	Peri.	74.65372	-0.87735041	+0.47739381
a	2.4264873	Node	133.83345	-0.46198942	-0.81305545
e	0.1404625	Incl.	3.85447	-0.12969978	-0.33322062
P	3.78	H	14.5	G	0.15

Residuals in seconds of arc

600924	675	0.4-	0.0	601022	675	1.5-	0.6-	900816	809	0.2-	0.8-
600926	675	0.2-	0.1+	601024	675	0.5+	0.4-	900818	809	0.2+	0.2+
600927	675	1.1+	0.5+	601026	675	1.0+	0.4-	900818	809	0.2-	0.2+
600928	675	0.4-	0.2-	900816	809	1.6+	0.5+	900818	809	0.9-	0.6-
601017	675	0.2-	1.2+	900816	809	0.6-	0.5+				

6792 P-L = 1990 SE7

Epoch	1990 Nov. 5.0	ET =	JDE 2448200.5		Williams
M	57.92307		(1950.0)	P	Q
n	0.19773935	Peri.	208.70259	+0.65848387	+0.75047907
a	2.9179240	Node	102.54140	-0.67894956	+0.62470563
e	0.0551664	Incl.	3.31190	-0.32469444	+0.21569434
P	4.98	H	14.0	G	0.15

Residuals in seconds of arc

600924	675	0.6-	0.1-	601017	675	0.2+	0.8+	900922	809	0.2+	0.3+
600926	675	0.6-	0.2-	601026	675	0.6-	0.2-	900925	809	0.2-	0.2-
600927	675	0.1+	0.4-	900922	809	1.3+	0.9+	900925	809	0.8-	0.7-
600928	675	0.2+	0.1+	900922	809	1.0+	0.6+	900925	809	1.2-	1.4-

7622 P-L = 1990 TL

Id. R. Nagata					
Epoch	1990 Nov. 5.0	ET =	JDE 2448200.5		Williams
M	17.67144		(1950.0)	P	Q
n	0.29637578	Peri.	322.68358	+0.99303337	-0.08617384
a	2.2279609	Node	42.47948	+0.11417953	+0.87223349
e	0.1799648	Incl.	6.83463	-0.02911632	+0.48143827
P	3.33	H	14.5	G	0.15

Residuals in seconds of arc

601022	675	0.2-	0.0	901012	413	0.4-	0.3+	901016	413	0.2+	0.4-
601025	675	0.0	0.1+	901012	413	0.3-	0.1+	901028	413	0.2-	0.5+
601026	675	0.1+	0.2+	901013	413	0.9+	0.5-	901113	413	0.2-	0.2-

1335 T-2 = 1990 TG7

Epoch	1990 Nov. 5.0	ET =	JDE 2448200.5	(J-P)	Marsden
M	309.84603		(1950.0)	P	Q
n	0.17854784	Peri.	287.10953	-0.24576141	-0.96933018
a	3.1234448	Node	177.11712	+0.89359693	-0.22679033
e	0.1513834	Incl.	0.65605	+0.37561397	-0.09468446
P	5.52	H	14.0	G	0.15

Residuals in seconds of arc

730919	675	1.0-	0.1-	730925	675	1.4+	0.6-	730930	675	1.6-	1.7+
730919	675	0.0	0.6+	730929	675	0.1-	0.2-	730930	675	1.6+	1.9+
730924	675	0.7-	0.1-	730929	675	1.1+	1.9-	730930	675	1.8-	1.0+
730924	675	1.0-	0.8+	730929	675	0.5-	0.7-	730930	675	1.7+	2.5+
730925	675	1.4+	1.5-	730929	675	0.1+	1.9-	731004	675	0.2-	1.4-

731004 675	0.3-	2.3+	731005 675	0.3+	2.2-	901013 033	0.9+	0.4+
731004 675	0.7+	0.9-	731005 675	0.2+	0.5-	901014 033	0.2-	0.1-
731004 675	1.3-	1.2+	901013 033	0.7-	0.3-			

2160 T-2 = 1962 WB2 = 1979 WA6 = 1985 VL3 = 1987 GH = 1990 QW8

Id. D. W. E. Green (MPC 14965; unpublished), S. Nakano

Epoch 1990 Nov. 5.0 ET = JDE 2448200.5

Nakano

M 318.44926

(1950.0)

P

Q

n 0.17167962 Peri. 4.17192 +0.62443589 -0.78097589

a 3.2061972 Node 47.18785 +0.71609357 +0.56601651

e 0.1880532 Incl. 0.97703 +0.31191315 +0.26401130

P 5.74 H 12.8 G 0.15

Residuals in seconds of arc

621130 760	0.6+	0.3-	730930 675	0.4+	0.3+	870401 675	(16.2-	1.4-)
621130 760	0.5-	0.4+	730930 675	0.3+	0.2-	870401 675	(13.9-	2.2-)
730919 675	1.2-	1.0+	731004 675	0.8+	0.6+	870403 675	(14.2-	1.3-)
730919 675	0.1+	0.6+	731004 675	0.9+	0.8+	870403 675	(13.5-	2.4-)
730920 675	1.1-	0.6-	731005 675	0.5+	0.9-	900816 809	1.6+	0.7+
730924 675	1.9-	1.1+	731005 675	(2.5-	3.6+)	900816 809	0.5-	0.7-
730924 675	1.4-	1.3+	731005 675	0.8+	0.3-	900816 809	1.5-	1.4-
730925 675	0.5+	0.8-	731005 675	(1.0-	3.4+)	900818 809	1.3+	0.7+
730925 675	0.9+	1.3-	791117 095	0.5+	0.3-	900818 809	0.2-	0.2+
730929 675	0.5-	0.7-	851110 095	0.3+	0.9-	900818 809	0.3-	0.2-
730929 675	0.1+	0.1-	851120 095	0.5-	0.8+			

3290 T-2 = 1990 SQ9

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

Marsden

M 204.88587

(1950.0)

P

Q

n 0.17337433 Peri. 131.21083 -0.94978964 -0.30781547

a 3.1852759 Node 30.98322 +0.24439063 -0.84182505

e 0.0360815 Incl. 6.25841 +0.19537874 -0.44337368

P 5.68 H 13.0 G 0.15

Residuals in seconds of arc

730919 675	1.6-	0.4+	730929 675	0.1+	1.1+	731005 675	1.5-	0.2+
730919 675	0.5-	0.1-	730930 675	0.9+	3.9-	731005 675	1.6+	1.1-
730920 675	0.6-	1.4-	730930 675	1.0-	0.5+	731005 675	1.0-	0.2+
730924 675	0.4+	0.3+	730930 675	1.5+	2.9-	900922 809	0.1-	0.5+
730924 675	1.4+	0.3+	730930 675	0.5-	0.2-	900922 809	0.3-	0.9+
730925 675	1.4+	1.3+	731004 675	0.9-	1.4+	900922 809	0.2-	0.1-
730925 675	0.1-	0.8+	731004 675	0.6-	2.3+	900925 809	0.5-	0.4-
730929 675	0.6+	0.0	731004 675	1.0-	0.1-	900925 809	0.1+	0.7-
730929 675	0.6-	0.0	731004 675	0.7-	1.2+	900925 809	0.8+	0.1-
730929 675	0.8+	0.1-	731005 675	2.1+	0.2-			

4086 T-3 = 1990 SD7

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

Williams

M 45.39890

(1950.0)

P

Q

n 0.30216235 Peri. 205.21251 +0.72629898 +0.68469077

a 2.1994293 Node 111.43498 -0.61905298 +0.68994880

e 0.1890093 Incl. 3.74089 -0.29876948 +0.23488123

P 3.26 H 16.5 G 0.15

Residuals in seconds of arc

771007 675	0.0	0.5+	771016 675	0.2+	1.5+	900922 809	0.5+	0.5+
771011 675	0.0	1.3-	771017 675	1.0+	0.1-	900922 809	0.8+	0.9-
771011 675	0.1+	1.3-	771017 675	0.8-	0.7-	900922 809	1.5-	0.2-
771012 675	0.0	0.3+	771021 675	0.2-	1.4+	900925 809	0.7+	0.7+
771012 675	0.6+	0.3-	771021 675	0.8-	0.8-	900925 809	0.0	0.7-
771016 675	0.9-	1.7+	771022 675	0.8+	1.1-	900925 809	0.5-	0.6+

NEW NAMES OF MINOR PLANETS.

(2294) Andronikov = 1977 PL1

Discovered 1977 Aug. 14 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Named in memory of Irakli Luarsabovich Andronikov (Andronikashvili, 1908-1990), Soviet writer and literary scholar. He was a brilliant teller of his own stories and reminiscences about writers, artists and other men of art. His main research was devoted to the life and creative work of the celebrated Russian poet M. Yu. Lermontov.

(2295) Matusovskij = 1977 QD1

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

Named in memory of Mikhail L'vovich Matusovskij (1915-1990), well known Soviet poet.

(2296) Kugultinov = 1975 BA1

Discovered 1975 Jan. 18 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Named in honor of David Nikitich Kugul'tinov, renowned Soviet poet and national poet of Kalmykia.

(2320) Blarney = 1979 QJ

Discovered 1979 Aug. 29 by P. Wild at Zimmerwald.

Named for the famous Irish castle near Cork. What will happen to the first astronaut to kiss this stone remains to be seen.

(2337) Boubin = 1976 UH1

Discovered 1976 Oct. 22 by P. Wild at Zimmerwald.

Named for a mountain in Bohemia that offers a wonderful panorama and still has a virgin forest on its slopes. Name suggested by I. Bauersima.

(2353) Alva = 1975 UD

Discovered 1975 Oct. 27 by P. Wild at Zimmerwald.

Named for an American former girlfriend of the discoverer.

(2517) Orma = 1968 SB

Discovered 1968 Sept. 28 by P. Wild at Zimmerwald.

The name, the Italian word for a trace or track, seems very appropriate for a minor planet. That it should apply to this particular object follows from the fact that the number and name are an alphanumerical variation of (1257) Mora.

(2521) Heidi = 1979 DK

Discovered 1979 Feb. 28 by P. Wild at Zimmerwald.

Named for the heroine of a still highly popular, deeply moving children's tale from the Swiss Alps, by Johanna Spyri (1829-1901).

(2843) Yeti = 1975 XQ

Discovered 1975 Dec. 7 by P. Wild at Zimmerwald.

Named to ensure reality for the mysterious "abominable snowman" that supposedly roams the Himalayan glaciers.

(3019) Kulin = 1940 AC

Discovered 1940 Jan. 7 by G. Kulin at Budapest.

Named in memory of Gyorgy Kulin (1905-1989), staff astronomer at the Konkoly Observatory from 1935 to 1947. Internationally renowned for his

discoveries of minor planets (19 of which have been numbered) with the Konkoly 0.60-m reflector, he also made accurate computations of their orbits. In Hungary he was known for encouraging the development of amateur astronomy: he made almost 7000 telescope mirrors, wrote dozens of books and hundreds of articles to popularize astronomy. The Hungarian "Flammarion", he directed the Urania Observatory in Budapest from 1947 to 1975 and facilitated in many ways the publication of the Hungarian Astronomical Association's magazine "Meteor". Name suggested by Attila Mizser and endorsed by E. Bowell and B. G. Marsden, who found the identifications involving this planet.

(3491) Fridolin = 1984 SM4

Discovered 1984 Sept. 30 by P. Wild at Zimmerwald.

Named for the patron saint of the Swiss valley of Glarus, where it is still a popular Christian name, usually abbreviated to Fritz. The number of this object exceeds by one the sum of (1687) Glarona and (1803) Zwicky.

(3552) Don Quixote = 1983 SA

Discovered 1983 Sept. 26 by P. Wild at Zimmerwald.

Named for the hero of Cervantes' great romance, the Knight of the Sorrowful Countenance, the noble-minded eccentric who tries, in strange ways and in vain, to bring back the Age of Chivalry. The naming of this object is rather obvious, given the long-term erratic nature of the extended orbit, comparable to that of Hidalgo.

(3928) Randa = 1981 PG

Discovered 1981 Aug. 4 by P. Wild at Zimmerwald.

Named for a picturesque old village near Zermatt. This minor planet's number is the same as the village's code in the Swiss postal system.

(4055) Magellan = 1985 DO2

Discovered 1985 Feb. 24 by E. F. Helin at Palomar.

Named for the leader of the first expedition to circumnavigate the earth and the present highly successful automated expedition to Venus. Ferdinand Magellan did not survive the epic voyage of 1519-1522, but the expedition was a triumph of navigation and yielded discoveries (including the closest galaxies to our own) that sustained generations of explorers. The Magellan spacecraft, unlike its namesake, completed its voyage in timely fashion and only then met its real goal, the mapping of the surface of our planetary twin, a task being carried out with stunning success.

(4222) Nancita = 1988 EK1

Discovered 1988 Mar. 13 by E. F. Helin at Palomar.

Named in honor of Nancy Coker Helin, wife of Bruce Helin, the discoverer's son. A talented singer, composer and teacher, Nancita has brought music and joy to the Helin family.

(4224) Susa = 1988 KG

Discovered 1988 May 19 by E. F. Helin at Palomar.

Named in honor of Susan and Sarah Hicks, daughters of Bill and Nancy Hicks. They have shared in their parents' interest and generosity regarding space-related research over the years, particularly the pursuit of the small bodies in the solar system--minor planets and comets.

(4476) Bernstein = 1983 DE

Discovered 1983 Feb. 19 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in memory of Leonard Bernstein (1918-1990), American composer, conductor, pianist, educator, and author. A colorful, multifaceted musician,

Bernstein wrote music in many forms: symphonies, ballet music, operas, sacred music, chamber music and musicals, the last including "West Side Story", an innovative recasting of "Romeo and Juliet" in terms of New York street gang rivalries. From 1958 to 1969, Bernstein was chief conductor of the New York Philharmonic Orchestra; during this tenure he devised a series of brilliant televised lecture demonstrations. More recently, he conducted orchestras worldwide and became particularly celebrated for his interpretation of the music of Haydn, Brahms and Mahler.

(4503) Cleobulus = 1989 WM

Discovered 1989 Nov. 28 by C. S. Shoemaker at Palomar on films taken with the help of E. M. Shoemaker, D. H. Levy and H. E. Holt.

Named for Cleobulus (fl. c. 560 B.C.), one of the Seven Sages of Greece. A native and tyrant of Lindus in Rhodes, Cleobulus was renowned for the wisdom of his sayings, the beauty of his lyric poetry and his skill with riddles. Name proposed by the discoverer, following a suggestion by K. Williams, who provided material for the citation, and G. V. Williams, who solved the riddle of the identification involving this object.

(4546) Franck = 1990 EW2

Discovered 1990 Mar. 2 by E. W. Elst at the European Southern Observatory.

Named in memory of the great Belgian composer Cesar Franck (1822-1890), well known for his piano and organ works and beautiful symphony in D minor. His ancestry included members of the famous school of Wallonian painters, and his admiration for them influenced his way of composing--as a "musician painter". After only a year's study in Paris he received the "grand prix d'honneur" for piano, and a few years later the first prize for fugue, the art of which in France he restored following a lengthy period of discredit. For organ he achieved only the second prize, because the jury was not inclined to accept his genial and daring way of combining the theme of the fugue with the free theme cyclic principle. Appointed organist at St. Clothilde in 1859, he became a master in the art of improvisation. Name endorsed by J. Vanvinckenroye.

(4601) Ludkewycz = 1986 LB

Discovered 1986 June 3 by M. Rudnyk at Palomar.

Named in honor of Romana Ludkewycz, mother of the discoverer. Her unending support of her son's interest in astronomy has been a constant source of inspiration since his childhood. Associated with the Palomar planet-crossing asteroid program during 1985-1987, he is currently involved in JPL's Planetary Image Facility.

(4603) Bertaud = 1986 WM3

Discovered 1986 Nov. 25 by C. Pollas at Caussols.

Named in honor of Charles Bertaud, under whose leadership at Meudon the discoverer began his astronomical work. Well known as an observer of comets, supernovae and particular stars, he was one of the initiators of the project that led to the construction of Schmidt telescope at Caussols.

(4611) Vulkaneifel = 1989 GR6

Discovered 1989 Apr. 5 by M. Geffert at the European Southern Observatory.

Named in honor of the landscape and people of a region to the southwest of Bonn. The landscape of that region is full of volcanic relics such as craters and lava streams, as well as "Maare", which are small lakes. The observatory of the University of Bonn, Hoher List, where the discoverer works, is located in the Vulkaneifel near one of these lakes.

EPHEMERIDES.

1980 WF		a,e,i = 2.23, 0.51, 6				Elements MPC 5841		
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		V
1990 11 15		04 26.88	+26 14.9	0.193	1.174	-24.92	-16.5	16.1
1990 11 20		04 46.38	+23 49.1					
1990 11 25		05 08.66	+20 29.8	0.153	1.135	-31.75	+6.8	15.5
1990 11 30		05 33.66	+16 11.6					
1990 12 05		06 00.82	+10 57.9	0.128	1.106	-36.64	+36.5	15.2
1990 12 10		06 29.06	+05 06.1					
1990 12 15		06 57.04	-00 52.6	0.121	1.088	-36.36	+41.7	15.4
1990 12 20		07 23.44	-06 24.3					
1990 12 25		07 47.29	-11 04.4	0.130	1.084	-32.75	+21.7	15.7
1990 12 30		08 08.05	-14 43.1					
1991 01 04		08 25.54	-17 21.8	0.149	1.092	-28.47	+9.5	16.1
1991 01 09		08 39.84	-19 06.9					
1991 01 14		08 51.22	-20 05.8	0.173	1.112	-23.94	+13.9	16.5
1991 01 19		09 00.12	-20 25.8					
1991 01 24		09 07.01	-20 13.4	0.203	1.144	-19.48	+26.6	16.8
1991 01 29		09 12.33	-19 34.6					
1991 02 03		09 16.47	-18 34.8	0.237	1.186	-15.61	+39.0	17.0
1991 02 08		09 19.76	-17 18.3					
1991 02 13		09 22.53	-15 49.5	0.278	1.236	-12.57	+46.6	17.3

1990 VB		a,e,i = 2.45, 0.53, 15				Elements MPC 17459		
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 11 25		23 34.10	+19 22.8	0.498	1.298	118.2	42.1	16.7
1990 12 05		00 17.63	+17 29.3					
1990 12 15		00 55.40	+16 01.1	0.661	1.409	116.4	38.7	17.4
1990 12 25		01 28.32	+15 02.6					
1991 01 04		01 57.47	+14 30.8	0.892	1.535	109.8	37.0	18.2
1991 01 14		02 23.82	+14 19.9					
1991 01 24		02 48.18	+14 24.2	1.173	1.669	101.1	35.4	18.9
1991 02 03		03 11.11	+14 38.3					
1991 02 13		03 32.99	+14 57.8	1.489	1.806	91.4	33.1	19.5
1991 02 23		03 54.13	+15 19.3					
1991 03 05		04 14.69	+15 40.1	1.826	1.942	81.3	30.3	20.1

1990 TG1		a,e,i = 2.48, 0.69, 9				Elements MPC 17452		
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 11 25		00 45.97	+04 32.8	2.425	3.157	130.5	13.8	20.2
1990 12 05		00 44.05	+04 07.9					
1990 12 15		00 44.32	+03 58.7	2.798	3.263	109.6	16.5	20.7
1990 12 25		00 46.52	+04 03.4					
1991 01 04		00 50.37	+04 19.8	3.203	3.362	90.7	17.0	21.1

1990 UL3		a,e,i = 4.42, 0.58, 5				Elements MPC 17459		
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 11 25		01 41.16	+12 14.4	1.035	1.934	146.0	16.6	17.4
1990 12 05		01 45.73	+11 53.3					
1990 12 15		01 52.78	+11 52.4	1.234	1.998	128.2	22.8	18.0
1990 12 25		02 02.08	+12 09.4					
1991 01 04		02 13.30	+12 40.8	1.487	2.077	112.8	25.9	18.6
1991 01 14		02 26.08	+13 22.9					
1991 01 24		02 40.17	+14 12.2	1.779	2.166	99.2	26.7	19.1
1991 02 03		02 55.29	+15 05.5					
1991 02 13		03 11.23	+16 00.1	2.097	2.264	86.6	25.8	19.6
1991 02 23		03 27.84	+16 53.8					
1991 03 05		03 44.96	+17 44.6	2.429	2.369	74.7	23.8	19.9

Periodic Comet Shoemaker-Levy (1990o)

Elements MPC 17400								
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1990 11 25		01 44.70	+05 05.3	0.831	1.730	143.9	19.7	12.5
1990 12 05		01 44.42	+09 58.3					
1990 12 15		01 47.78	+14 05.3	1.076	1.851	127.8	24.8	13.3
1990 12 25		01 54.27	+17 33.9					
1991 01 04		02 03.34	+20 31.8	1.385	1.988	113.0	27.1	14.2
1991 01 14		02 14.50	+23 05.3					
1991 01 24		02 27.36	+25 19.6	1.738	2.136	99.6	27.0	15.0
1991 02 03		02 41.61	+27 18.3					
1991 02 13		02 56.95	+29 03.6	2.118	2.291	87.1	25.5	15.7
1991 02 23		03 13.22	+30 37.4					
1991 03 05		03 30.20	+32 00.7	2.509	2.451	75.1	23.0	16.4
1991 03 15		03 47.75	+33 14.3					
1991 03 25		04 05.76	+34 18.7	2.898	2.612	63.6	20.0	17.0
1991 04 04		04 24.08	+35 14.3					
1991 04 14		04 42.61	+36 01.4	3.271	2.774	52.3	16.6	17.5
1991 04 24		05 01.26	+36 40.5					
1991 05 04		05 19.91	+37 11.9	3.616	2.936	41.4	13.1	18.0
1991 05 14		05 38.48	+37 36.0					
1991 05 24		05 56.89	+37 53.4	3.922	3.097	30.9	9.7	18.4

Elements MPC 17459								
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 11 25		02 03.77	-06 57.2	0.303	1.236	140.5	30.5	19.2
1990 12 05		01 56.68	-09 29.6					
1990 12 15		01 56.67	-10 16.9	0.432	1.252	118.9	43.5	20.3
1990 12 25		02 01.97	-09 58.6					
1991 01 04		02 11.20	-09 00.0	0.568	1.247	103.8	50.0	21.1

Elements MPC 17456								
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 11 25		02 30.39	+05 07.7	0.619	1.566	153.5	16.3	18.3
1990 12 05		02 23.45	+05 51.0					
1990 12 15		02 21.77	+06 49.9	0.864	1.695	132.9	25.2	19.5
1990 12 25		02 24.27	+07 59.3					
1991 01 04		02 30.02	+09 15.2	1.157	1.812	115.5	29.3	20.4

Elements MPC 17461								
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 11 25		06 04.96	+22 24.1	0.392	1.343	150.7	21.1	15.6
1990 12 05		06 03.71	+34 35.8					
1990 12 15		05 56.64	+46 53.4	0.373	1.333	155.5	17.8	15.4
1990 12 25		05 44.60	+56 56.3					
1991 01 04		05 31.68	+63 46.4	0.457	1.354	136.8	29.8	16.3
1991 01 14		05 24.23	+67 47.5					
1991 01 24		05 28.00	+69 46.9	0.595	1.403	123.4	35.9	17.1
1991 02 03		05 44.5	+70 23.2					
1991 02 13		06 10.73	+69 56.5	0.754	1.475	115.2	37.3	17.7

Periodic Comet Helin-Roman-Crockett (1988 XIII)

Elements MPC 15672								
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1991 01 04		15 11.94	-14 45.2	4.754	4.236	53.0	10.7	20.7
1991 01 14		15 20.39	-15 15.8					
1991 01 24		15 28.02	-15 41.4	4.504	4.257	69.4	12.5	20.6
1991 02 03		15 34.66	-16 01.7					
1991 02 13		15 40.17	-16 16.9	4.221	4.278	86.6	13.3	20.4
1991 02 23		15 44.37	-16 26.8					
1991 03 05		15 47.12	-16 31.6	3.933	4.299	105.0	12.9	20.3

1991 03 15	15 48.32	-16 31.4						
1991 03 25	15 47.89	-16 26.4	3.672	4.319	124.8	10.9	20.2	
1991 04 04	15 45.84	-16 17.0						
1991 04 14	15 42.28	-16 03.6	3.472	4.339	145.8	7.5	20.1	
1991 04 24	15 37.44	-15 47.0						
1991 05 04	15 31.67	-15 28.4	3.368	4.358	167.6	2.9	20.0	
1991 05 14	15 25.38	-15 09.1						
1991 05 24	15 19.08	-14 50.8	3.378	4.376	169.0	2.5	20.1	
1991 06 03	15 13.25	-14 35.3						
1991 06 13	15 08.27	-14 23.9	3.503	4.394	147.6	7.1	20.2	
1991 06 23	15 04.48	-14 17.9						
1991 07 03	15 02.07	-14 17.9	3.723	4.411	127.1	10.6	20.3	
1991 07 13	15 01.13	-14 24.1						
1991 07 23	15 01.66	-14 36.5	4.006	4.428	108.1	12.6	20.5	
1991 08 02	15 03.62	-14 54.4						
1991 08 12	15 06.92	-15 17.1	4.321	4.444	90.3	13.2	20.7	
1991 08 22	15 11.45	-15 44.0						
1991 09 01	15 17.09	-16 14.1	4.636	4.459	73.7	12.5	20.8	
1991 09 11	15 23.73	-16 46.5						
1991 09 21	15 31.26	-17 20.5	4.927	4.474	57.8	11.0	21.0	
1991 10 01	15 39.57	-17 55.2						
1991 10 11	15 48.55	-18 30.0	5.174	4.488	42.4	8.6	21.1	

Periodic Comet Russell 4 (1989g1)

Elements IAUC 4932

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1991 01 04		15 41.44	-17 05.8	3.126	2.536	45.5	16.1	20.5
1991 01 14		15 57.94	-18 05.3					
1991 01 24		16 13.63	-18 56.4	2.983	2.599	58.0	18.7	20.5
1991 02 03		16 28.32	-19 39.7					
1991 02 13		16 41.84	-20 16.0	2.808	2.665	71.5	20.6	20.5
1991 02 23		16 53.95	-20 46.1					
1991 03 05		17 04.41	-21 11.2	2.612	2.733	86.3	21.2	20.5
1991 03 15		17 13.00	-21 32.4					
1991 03 25		17 19.44	-21 50.7	2.409	2.802	102.7	20.3	20.4
1991 04 04		17 23.51	-22 07.3					
1991 04 14		17 25.01	-22 22.8	2.225	2.873	121.1	17.4	20.3
1991 04 24		17 23.85	-22 37.4					
1991 05 04		17 20.11	-22 50.9	2.087	2.945	141.6	12.3	20.3
1991 05 14		17 14.07	-23 02.7					
1991 05 24		17 06.27	-23 11.9	2.031	3.017	164.1	5.3	20.3
1991 06 03		16 57.53	-23 18.0					
1991 06 13		16 48.73	-23 21.3	2.080	3.090	172.7	2.4	20.5
1991 06 23		16 40.76	-23 22.8					
1991 07 03		16 34.34	-23 24.1	2.238	3.162	150.4	9.1	20.7
1991 07 13		16 29.92	-23 26.5					

Comet McNaught-Hughes (1990g)

Elements MPC 16842

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1991 01 04		16 10.79	-20 26.0	3.449	2.742	38.0	12.8	16.1
1991 01 14		16 14.93	-18 41.8					
1991 01 24		16 17.81	-16 40.5	3.104	2.706	57.5	17.9	15.8
1991 02 03		16 19.06	-14 16.8					
1991 02 13		16 18.20	-11 24.0	2.699	2.685	78.7	21.1	15.4
1991 02 23		16 14.66	-07 54.1					
1991 03 05		16 07.73	-03 38.8	2.291	2.681	102.2	21.2	15.1
1991 03 15		15 56.65	+01 28.6					
1991 03 25		15 40.65	+07 27.5	1.971	2.694	127.2	17.1	14.8
1991 04 04		15 19.32	+14 02.7					
1991 04 14		14 52.96	+20 40.0	1.851	2.722	143.4	12.7	14.7

1991 04 24	14 23.09	+26 34.1						
1991 05 04	13 52.38	+31 10.1	1.990	2.766	131.9	15.7	14.9	
1991 05 14	13 23.73	+34 17.8						
1991 05 24	12 59.31	+36 08.7	2.325	2.825	109.2	19.8	15.3	
1991 06 03	12 40.02	+37 03.6						
1991 06 13	12 25.73	+37 21.9	2.747	2.897	88.1	20.5	15.8	
1991 06 23	12 15.86	+37 18.2						
1991 07 03	12 09.62	+37 02.8	3.174	2.981	69.9	18.7	16.3	
1991 07 13	12 06.29	+36 42.1						
1991 07 23	12 05.28	+36 20.3	3.554	3.075	54.4	15.6	16.6	
1991 08 02	12 06.06	+36 00.5						
1991 08 12	12 08.27	+35 44.7	3.857	3.179	42.1	12.3	17.0	
1991 08 22	12 11.58	+35 34.7						
1991 09 01	12 15.74	+35 32.1	4.066	3.291	35.0	10.1	17.2	

Periodic Comet Van Biesbroeck (1989h1)

Elements MPC 16205

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1991 01 24		17 47.43	-18 27.5	3.240	2.513	36.2	13.4	18.5
1991 02 03		18 07.97	-18 27.1					
1991 02 13		18 28.34	-18 16.3	3.041	2.470	46.7	16.9	18.4
1991 02 23		18 48.39	-17 55.8					
1991 03 05		19 07.96	-17 26.3	2.827	2.437	57.2	20.0	18.3
1991 03 15		19 26.93	-16 48.9					
1991 03 25		19 45.13	-16 05.1	2.602	2.414	68.1	22.5	18.2
1991 04 04		20 02.41	-15 16.5					
1991 04 14		20 18.62	-14 25.2	2.374	2.403	79.5	24.2	18.0
1991 04 24		20 33.59	-13 33.2					
1991 05 04		20 47.14	-12 43.0	2.150	2.402	91.7	24.8	17.8
1991 05 14		20 59.08	-11 57.1					
1991 05 24		21 09.19	-11 18.3	1.938	2.413	105.4	23.9	17.6
1991 06 03		21 17.29	-10 49.2					
1991 06 13		21 23.15	-10 32.5	1.751	2.435	121.0	20.9	17.3
1991 06 23		21 26.61	-10 30.5					
1991 07 03		21 27.65	-10 44.4	1.608	2.468	139.0	15.7	17.0
1991 07 13		21 26.35	-11 14.3					
1991 07 23		21 23.08	-11 58.2	1.533	2.510	159.5	8.2	16.7
1991 08 02		21 18.44	-12 52.1					
1991 08 12		21 13.22	-13 50.8	1.549	2.562	177.3	1.1	16.5
1991 08 22		21 08.34	-14 48.3					
1991 09 01		21 04.62	-15 39.2	1.665	2.621	156.5	8.8	17.0
1991 09 11		21 02.64	-16 20.0					
1991 09 21		21 02.77	-16 48.6	1.871	2.688	136.3	15.0	17.5
1991 10 01		21 05.09	-17 04.3					
1991 10 11		21 09.49	-17 07.4	2.147	2.762	118.1	18.6	17.9
1991 10 21		21 15.79	-16 58.3					
1991 10 31		21 23.73	-16 38.2	2.469	2.841	101.6	20.0	18.3
1991 11 10		21 33.03	-16 07.9					
1991 11 20		21 43.45	-15 28.4	2.815	2.924	86.4	19.7	18.7
1991 11 30		21 54.75	-14 40.8					
1991 12 10		22 06.74	-13 45.9	3.166	3.011	72.0	18.1	18.9
1991 12 20		22 19.25	-12 44.9					
1991 12 30		22 32.13	-11 38.5	3.505	3.101	58.2	15.6	19.2
1992 01 09		22 45.27	-10 27.8					
1992 01 19		22 58.56	-09 13.7	3.816	3.194	44.8	12.5	19.3

Periodic Comet Shoemaker 1 (1984 XVI)

Elements MPC 13046

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1991 01 24		18 05.17	-44 09.9	3.869	3.145	-0.64	-1.7	19.9
1991 02 03		18 25.61	-44 17.7					

1991 02 13	18 45.98	-44 20.7	3.618	3.051	-0.61	-3.1	19.6
1991 02 23	19 06.10	-44 19.1					
1991 03 05	19 25.83	-44 13.6	3.332	2.957	-0.59	-4.6	19.3
1991 03 15	19 45.05	-44 05.0					
1991 03 25	20 03.56	-43 54.3	3.022	2.862	-0.59	-6.5	19.0
1991 04 04	20 21.21	-43 42.7					
1991 04 14	20 37.83	-43 31.6	2.699	2.768	-0.62	-8.7	18.6
1991 04 24	20 53.20	-43 22.6					
1991 05 04	21 07.09	-43 16.9	2.376	2.674	-0.68	-11.1	18.2
1991 05 14	21 19.22	-43 16.1					
1991 05 24	21 29.22	-43 21.2	2.066	2.582	-0.78	-13.9	17.7
1991 06 03	21 36.69	-43 32.6					
1991 06 13	21 41.14	-43 49.7	1.785	2.492	-0.95	-16.8	17.2
1991 06 23	21 42.05	-44 10.0					
1991 07 03	21 38.99	-44 28.3	1.549	2.406	-1.16	-19.1	16.8
1991 07 13	21 31.74	-44 36.8					
1991 07 23	21 20.62	-44 24.4	1.381	2.324	-1.38	-19.7	16.4
1991 08 02	21 06.76	-43 40.2					
1991 08 12	20 51.95	-42 16.9	1.301	2.248	-1.47	-18.6	16.1
1991 08 22	20 38.34	-40 13.6					
1991 09 01	20 27.73	-37 37.4	1.313	2.178	-1.33	-17.4	16.0
1991 09 11	20 21.10	-34 39.4					
1991 09 21	20 18.76	-31 30.6	1.407	2.118	-1.10	-17.3	16.0
1991 10 01	20 20.41	-28 19.4					
1991 10 11	20 25.54	-25 10.4	1.555	2.067	-0.93	-17.5	16.1
1991 10 21	20 33.60	-22 05.5					
1991 10 31	20 44.02	-19 04.7	1.736	2.027	-0.85	-17.5	16.3
1991 11 10	20 56.36	-16 07.1					
1991 11 20	21 10.24	-13 11.3	1.930	2.000	-0.83	-17.3	16.4
1991 11 30	21 25.33	-10 16.2					
1991 12 10	21 41.41	-07 20.7	2.125	1.987	-0.83	-16.7	16.6
1991 12 20	21 58.30	-04 24.1					
1991 12 30	22 15.83	-01 26.1	2.315	1.988	-0.84	-16.0	16.8
1992 01 09	22 33.93	+01 33.3					
1992 01 19	22 52.52	+04 33.8	2.496	2.003	-0.84	-15.1	17.0
1992 01 29	23 11.54	+07 34.7					
1992 02 08	23 30.99	+10 35.5	2.664	2.031	-0.84	-14.0	17.2
1992 02 18	23 50.85	+13 35.1					
1992 02 28	00 11.12	+16 32.3	2.819	2.072	-0.82	-12.7	17.4

1981 EE9		a,e,i = 3.12, 0.27, 6			Elements MPC 17429			
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 11 25		03 05.59	+25 06.3	1.309	2.282	166.9	5.6	16.8
1990 12 05		02 59.13	+24 03.8					
1990 12 15		02 55.15	+23 04.9	1.398	2.278	145.4	14.2	17.3
1990 12 25		02 54.23	+22 16.2					
1991 01 04		02 56.48	+21 41.3	1.567	2.281	125.3	20.6	17.8
1991 01 14		03 01.72	+21 20.9					
1991 01 24		03 09.66	+21 14.1	1.788	2.290	107.9	24.1	18.2

1988 RK1		a,e,i = 5.26, 0.09, 9			Elements MPC 17441			
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	V
1990 11 25		05 04.27	+25 28.1	4.269	5.226	164.2	2.9	17.0
1990 12 05		04 58.39	+25 30.6					
1990 12 15		04 52.38	+25 30.8	4.264	5.240	172.0	1.5	16.9
1990 12 25		04 46.68	+25 29.3					
1991 01 04		04 41.72	+25 26.9	4.382	5.254	149.7	5.4	17.3
1991 01 14		04 37.82	+25 24.5					
1991 01 24		04 35.21	+25 23.1	4.605	5.268	127.9	8.5	17.5